Mississippi State
UNIVERSITY

Center for Air Sea Technology

USER'S MANUEL

for the

NAVAL INTERACTIVE DATA ANALYSIS SYSTEM (NIDAS) VERSION 3.1

Technical Note 4-97
30 September 1997

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Prepared for: Naval Oceanographic Office (Code OTT)
Stennis Space Center, Mississippi 39529

Contract Numbers: NASA NAS13-564 Delivery Orders 82 and 96

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**NAVAL OCEANOGRAPHIC OFFICE
CODE OTT
STENNIS SPACE CENTER, MS 39529**

Prepared by:

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ACKNOWLEDGEMENTS

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APPENDICES

NIDAS USER'S MANUAL

1.0 INTRODUCTION

1.1 Scope

1.1.1 Identification

Computer Software Configuration Item (CSCI): Naval Interactive Data Analysis System (NIDAS)

Version: 3.1

Contract No: NASA NAS13-564-00-82
                    NASA NAS13-564-00-96

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1.1.2 System Overview

The objective of NIDAS is to provide NAVOCEANO with an Interactive overlay capability for several types of oceanographic, meteorological, and satellite defined data, and create 3-D gridded fields of temperature and salinity profiles constructed from a combination of "provinced" data (user derived) and gridded data.

1.1.3 Data Overview

NIDAS operates using numerous oceanographic data categories stored in an installed version of the Naval Environmental Operational Nowcast System (NEONS), a relational database management system (rdbms) which employs the ORACLE proprietary rdbms engine. Data management, configuration, and control functions for the supporting rdbms are performed externally. NIDAS retrieves and stores data to/from the rdbms but exercises no direct internal control over the rdbms or its configuration. Data is also ingested into the rdbms, for use by NIDAS, by external data acquisition processes. The data categories employed by NIDAS are:

- **Bathymetry** - ocean depth at 'x' minutes resolutions

- **Coastline** - vector coordinates of the shoreline at several different resolutions from the World Vector Shoreline (WVS) datasets

- **LLT** - oceanographic profiles of temperature, salinity and/or sound speed versus depth stored in the formats prescribed by the Master Oceanographic Observation Data Set (MOODS)

- **Volume** - 3-D grid of ocean climatologies

- **Image** - AVHRR LAC Sea-Surface Temperature Satellite Imagery

1.1.4 Functionality Overview

In the mil-std 2167a terminology, NIDAS is a Computer Software Configuration Item (CSCI). It is composed of four Computer Software Components (CSC), through which the functionality of NIDAS is achieved. The CSC's are as follows:

- **Graphical User Interface 1 (GUI 1)** - incorporates window management, user interface and display functionality;

- **Graphical User Interface 2 (GUI 2)** - incorporates window management, user interface and display functionality;

- **Data Retrieval Module (DRM)** - provides functional data management using relational RDBMS technology;

- **Data Interactive Module (DIM)** - incorporates data processing, application of interactive methods and algorithms to the data, and graphical (visualization) processing of the data.

NIDAS has one external interface, the user-GUI interface which includes two graphical user interfaces. The user-GUI interface supports user control of interactive techniques and response/feedback to the user in the form of data display (graphical or numerical) and status indicators.

Figure 1 illustrates the NIDAS Top Level module and external interface architecture with the four CSCs.

CSCI: NIDAS

```
                    CSC 3: Data Retrieval
                    Module (DRM)

CSC 1: Graphical User        CSC 2: Graphical User
Interface 1 (GUI 1)          Interface 2 (GUI 2)

USER

                    CSC 4: Data Interactive
FILES               Module (DIM)
```
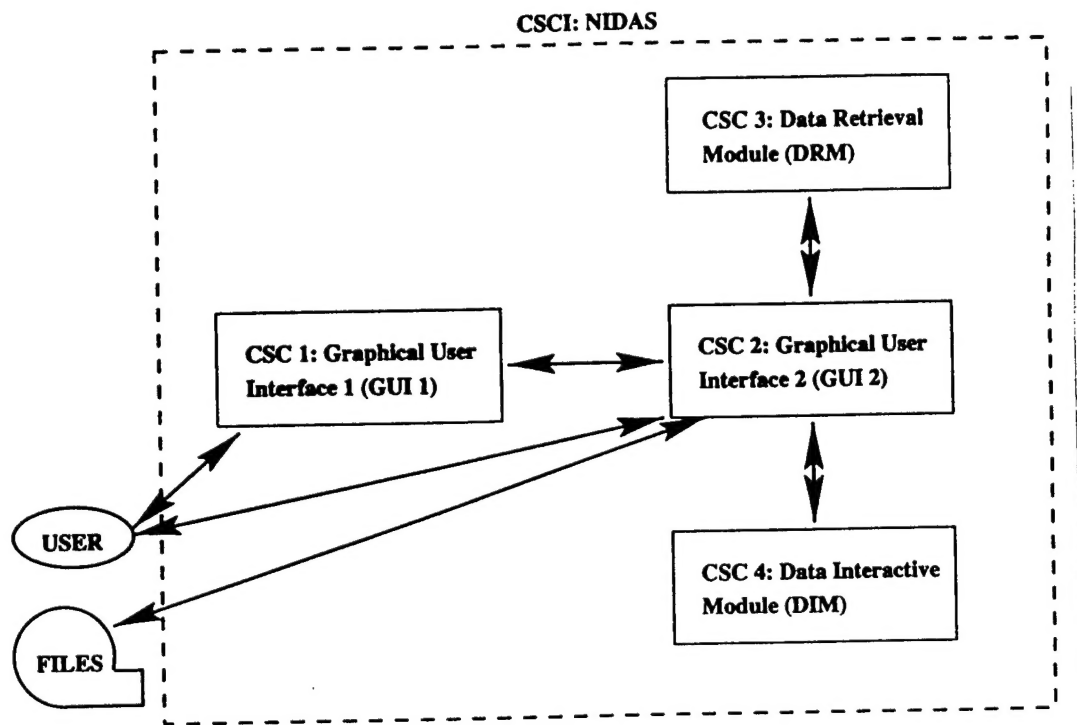
Figure 1. Top-Level Modular Structure of the Naval Interactive
Data Analysis System (NIDAS).

1.1.5 Support Overview.

This manual is the main document for NIDAS users support. System specifications are described in the NIDAS design document. Other additional support is contained in documentation for integrated proprietary (commercial) software, such as Oracle, and non-developed (government provided) software, such as the Naval Environmental Operational Nowcast System (NEONS).

1.1.6 Document Overview

The purpose of this document is to describe the functionality of NIDAS and the techniques/procedures that users may employ in producing a useful oceanographic product using NIDAS. Appendix A contains a glossary of terms

used in this document. Appendix B contains a list of acronyms. Appendix C consists of the User's Manual for the NIDAS Regional Configuration System. The User's Manual for the Database Administrator's Tools is in Appendix D. Installation procedures are located in Appendix E. A sample run-through of NIDAS, NRCS, and DBATools is located in Appendix F. A description of the pixmap images used in NIDAS and NRCS are found in Appendix G. Appendix H has the some informative tables and charts used in NIDAS.

1.2 Conventions

To simplify and standardize the communication of procedural details to the user, this manual adopts the following conventions:

- **Mouse Button Convention:** Most "click" or "select" operations with the mouse use the left button. Unless otherwise specified, instructions to "click" or "select" refer to the left mouse button. When a "click" or "select" using the middle or right mouse button is required, the specific mouse button will be indicated in the text; otherwise the left mouse button should be assumed.

- **Non-interactive Textboxes:** Textboxes with a buff-colored background are non-interactive. They provide information only and cannot be modified by the user.

- **Dragging the Mouse:** Dragging the mouse refers to clicking the left mouse button, moving the mouse across the screen, and then releasing the mouse button.

1.3 Referenced Documents

This user's manual either contains references to the following documents, or summarizes information contained in them which is appropriate for further reading.

1.3.1 DOD-STD 2167A "Defense System Software Development", AMSC No. N4327, 29 Feb 88.

1.3.2 NASA NAS12-564 Deliver Order 82 Dated 23 May 1996

1.3.3 NASA NAS12-564 Delivery Order 96 Dated 4 September 1996

1.3.4 "Design Document, Database Specifications, and Database Administration for the Naval Interactive Data Analysis System

(NIDAS),Version 3.1", Technical Note 03-97, Mississippi State University, Center for Air Sea Technology, 1, June 1997.

2.0 EXECUTION PROCEDURES

2.1 Initialization (Launching the Application)

NIDAS observes the standard procedure for executing an application in the UNIX/X-Windows environment. At the UNIX command line prompt, enter *nidas3*. NIDAS has a few command line options for setting the background and foreground colors. For additional information, at the UNIX command line prompt, enter *nidas3 -help*. When X-Windows initialization procedures are complete the NIDAS GUI or "Main Window" display will appear. If using "toms Window manager"- "twmrc", a window skeleton appears on screen which must be maneuvered to the desired position on the monitor screen with the mouse. If using "motif window manager"- "mwmrc", the position of the main display is predefined and appears without any further action after entering *nidas3* from the keyboard. Other window managers may involve different user action before "Main Window" display appears.

2.2 Description of Display Windows

The screen displays of NIDAS are X-Windows client window objects. Window control adheres to X-Windows procedures. As illustrated in Figure 2, the Top Level Window consists of globe map, region specification, menu bar, and title area. The design of the Main Window is subdivided into the following areas (as shown in Figure 3): the title area; the "Main Chart" which provides a geographical display; the "Profile Chart" which displays the profiles of the LLT data type; a pull-down menu bar containing various options for interacting with the "Main Chart" and "Profile Chart" windows; data control and interaction buttons; window control buttons; and a "Remark" area which communicates important messages to the user.

The "Data Selection" window consists of "Data", "Options", and "Dismiss" for each of the data models. The "Data Retrieval" window consists of parameter, analysis tools, LLT tools, volume tools, image tools, synthetic, gridding, and window operation.

2.2.1 Top Level Window (GUI 1)

The NIDAS GUI 1, shown in Figure 2, manages one of the links between the user and NIDAS. Through this GUI the user can select from among the list of predefined regions. The GUI indicates the selected region by displaying a

rectangle across the region. From the "Program" pulldown menu the user can perform one of three operations: bring up the Main Window GUI by selecting the "Nidas" button; clear any region specified by selecting the "Reset" button; and exit from the application by selecting the "Exit" button.
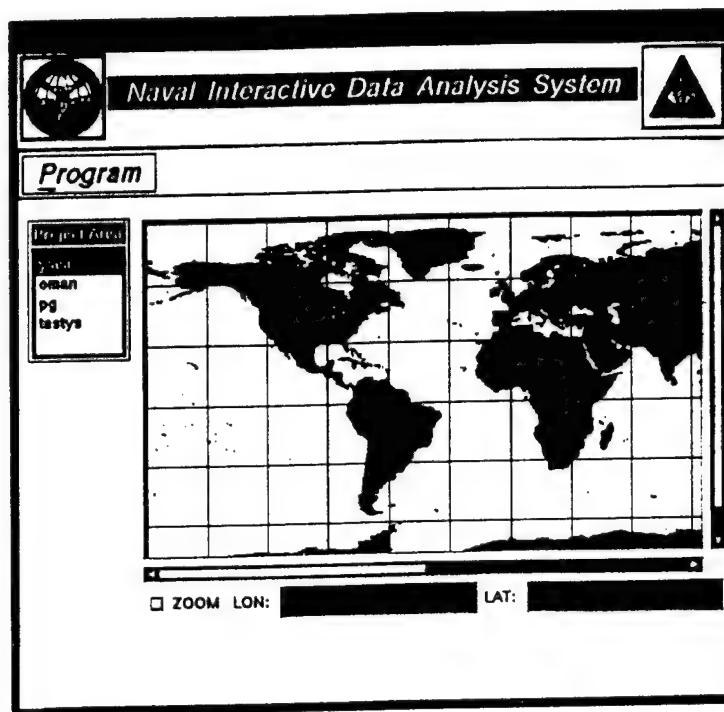

Figure 2. NIDAS "Top Level Window" Display Screen

By selecting the "Nidas" button from the "Program" pulldown menu, the user can bring up the Main Window GUI (GUI 2). Selecting the "Nidas" button without a region being specified would result in an error message being displayed. By selecting the "Reset" button from the "File" pulldown menu, the Main Window is returned to its default state.

2.2.2 Main Window (GUI 2)

The NIDAS GUI 2 shown in Figure 3, manages the second link between the user and NIDAS. Through this GUI, the user exercises all available NIDAS control options. NIDAS provides pop-up windows for user interaction, as well as interactive functionality within the "Main Window" itself. Data can be displayed on the "Main Chart" (left section of the main window) and/or "Profile Composite Chart" (right section of the main window). If the "Multiview" option (Section 2.2.4.8) is selected, then the two chart areas would be replaced with six charts. The DRM and DIM perform the preparatory data selection, data

processing, and data management functions required to generate the visual displays that appear within the Main Window.
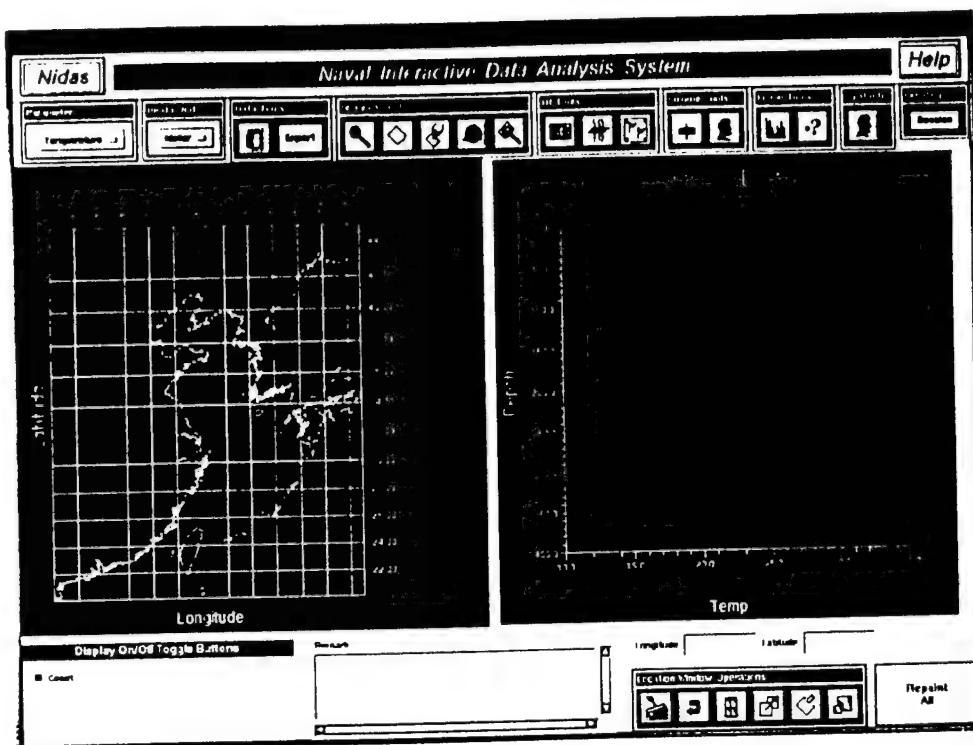

Figure 3. NIDAS "Main Window" Display Screen.

2.2.2.1 Main Chart

The "Main Chart" section of the Main Window, as shown in Figure 3, displays plotted data in a geographical coordinate (map) context, using contours, points, and/or user selectable area color fills. The "Main Chart" retains all datasets selected from the DRM during execution unless specifically removed by deselection. To remove a specific data display, deactivate the "Display" button (located in the "Display On/Off Toggle Buttons" section of the Main Window) for the appropriate data category within the DRM "Data Selection" window. When deactivated, the "Display" button for that data type will no longer be highlighted.

2.2.2.2. Profile Composite Chart

The "Profile Composite Chart" section of the Main Window is used to plot temperature, salinity, sound speed, density, or conductivity versus depth profiles. The profile composite chart accepts Volume, and LLT profiles. To remove a plot display from the "Profile Composite Chart", deactivate the "Display" button for

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the appropriate profile data category within the "Display On/Off Toggle Buttons" section.

2.2.2.3 Menu Bar

The NIDAS "Main Window" contains a menu bar with interactive menu headers labeled "Nidas" and "Help". Each menu header provides access to additional NIDAS features. Figure 4 illustrates all the available menu options, which are described in detail.
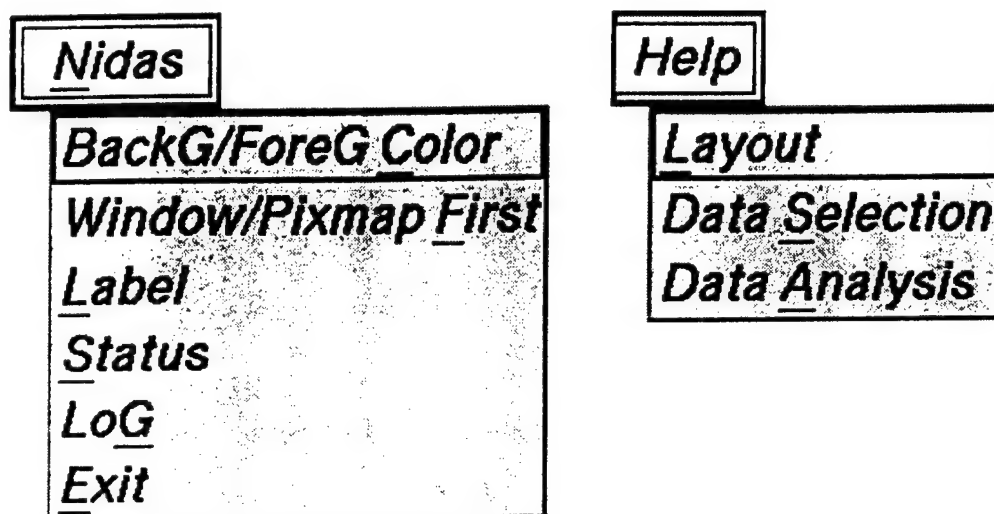

Figure 4. NIDAS "Main Window" Menu Headers
and Pulldown Menu Options.

2.2.2.3.1 File Pulldown Menu

The options available from the "File" pulldown menu are **"BackG/ForeG Color"**, **"Window/Pixmap First"**, **"Label"**, **"Status"**, **"Log"**, and **"Exit"**.

- **BackG/ForeG Color** - The "BackG/ForeG Color" option toggles the background and foreground colors for the Main Window charts. The background and foreground colors to toggle can be set from command-line options.

- **Window/Pixmap First** - The "Window/Pixmap First" option toggles the drawing order of the graphics. The default is to display as the graphics is being drawn. This is toggled with display after the graphic is drawn. Doing this prevents any outside agent from distorting or erasing part of the graphic.

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- **Label** - The "Label" option provides up to five labels for the user to use. Each time selected, a new label is created until five labels exist. With the mouse over the label, pressing **shift** key and the right most mouse button at the same time creates a pop-up dialog which allows the user to change the background and foreground colors, and the font of that label. Just pressing the right most mouse button alone will close that label.

- **Status** - The "Status" menu item provides time, date, and plotting color information about each data type selected from the DRM "Data Selection" window. The "Data Selection Status" scrollable pop-up window appears in response to the selection of the "Status" menu item. The status information is displayed within the "Data Selection Status" window. To close the "Data Selection Status" window, click the "Dismiss" button on that window.

- **Log** - The "log" option provides information on the user's pst interactive with NIDAS. A "User Interaction" pop-up dialog is created to show the information and can be closed by clicking the "Dismiss" button.

- **Exit** - Upon clicking on the exit button, the "Exit" pop-up window will be displayed. This pop-up window allows confirmation of the desire to exit (clicking the "Ok" button) or to return to the application (clicking the "Cancel" button).

2.2.2.3.2 The Help Pulldown Menu

The "Help" pulldown menu offers on-line assistance to the user. Help is available on "Layout", "Data Selection", and "Data Analysis" from the menu items that appear when the "Help" menu header is selected. Help on each subject is provided in a series of pop-up help screen windows that appear in response to menu item selection. To close a help screen, click the "Ok" button on the window.

2.2.2.4 Remark

The buff-colored "Remark" textbox is located in the lower middle portion of the "Main Window" display. The "Remark" textbox provides notification of errors, event status and communicates instructions for follow-on interaction by the user.

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2.2.3 Data Retrieval Module (DRM)

The Data Retrieval Module (DRM) controls the display and selection of data for the NIDAS CSCI. User interaction with the DRM is handled via the "Data Selection" window shown in Figure 5a. The Data Selection window consists of a list of the data types and the datasets. When a particular data type is selected, the corresponding datasets are listed in the dataset list. Each dataset listed can be toggled between display on or off. (See the "Display On/Off Toggle Buttons" area shown in Figure 5b.) These can be read into memory by clicking the "Data" button, and can have certain options set by clicking the "Options" button. The "Display" buttons select data types to be viewed in the "Main Chart" or "Profile Composite Chart" within the NIDAS "Main Window" display.
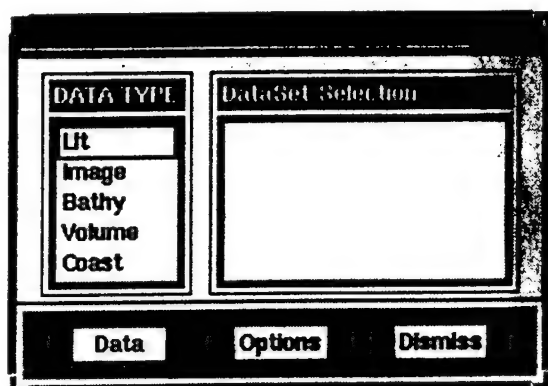
5a. "Data Selection" Window   5b. "Display On/Off Toggle Buttons

Figure 5. Illustration Data Retrieval Module (DRM)

The "Data" buttons produce tailored dialog pop-up windows that allow selections from available parameters contained in the dataset. The "Options" buttons produce data dialog pop-up windows tailored to each data type, offering other user options such as color. The "Dismiss" button closes the "Data Selection Window."

2.2.3.1 Bathymetry

2.2.3.1.1 Data Display

Selecting the bathymetry "Display" button produces a contour plot of the button depth on the "Main Chart.

2.2.3.1.2 Data Selection

Bathymetry does not vary with time or day. It is determined by the region designated for the "Main Chart". The bathymetry "Data" button is a non-interactive button.

2.2.3.1.3 Data Options

When the bathymetry "Options" button is clicked, a pop-up window is produced, as shown in Figure 6, which allows modification of the minimum and maximum data values, interval between plotted contours, isoline color and width, label on/off flag, and label color and height. The minimum, maximum, and interval values can be set by typing into the corresponding text boxes and pressing the <return> key. The colors can be set from pulldown color menus. The flags can be set by selecting the respective toggle buttons, and the height and width can be set by moving the respective slider bars until the required values are obtained. The selected colors are displayed in the colored textboxes. The "Dismiss" button accepts the changes and removes the pop-up window. The "Reset" button restores all values to their previous values.
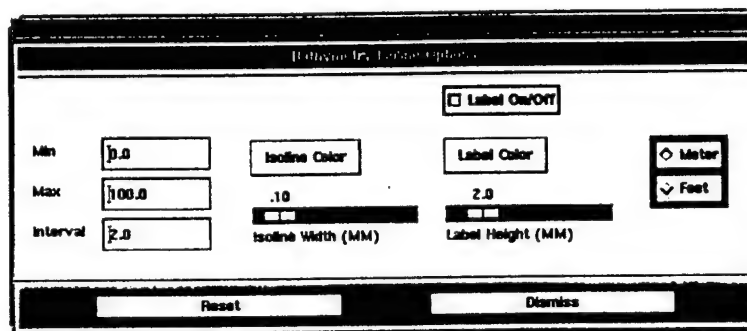

Figure 6. The "Bathymetry Options" Pop-Up Window.

2.2.3.2 Coastline

2.2.3.2.1 Data Display

Clicking the "Display" button associated with the coastline data type plots the coastline on the "Main Chart".

2.2.3.2.2 Data Selection

Clicking the "Data" button associated with the coastline data type produces the "Coastline Data" pop-up window illustrated in Figure 7. The "Coastline Data" pop-up window allows selection of the coastline resolutions (1, 3, 8, or

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20 kilometers) which requires the user to select a particular type of coastline. The selected resolution is displayed in the textbox. Clicking the "Ok" button accepts any changes made to coastline resolution and closes the pop-up window. Clicking the "Reset" button restores the coastline resolution to its previous value.
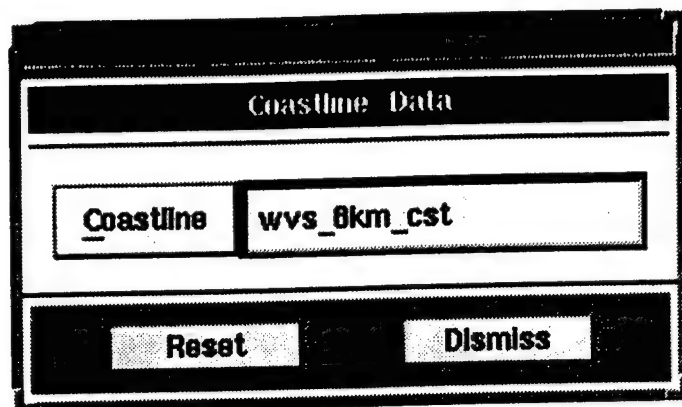

Figure 7. The "Coastline Data" Pop-Up Window.

2.2.3.2.3 Data Options

Selecting the "Options" button associated with the coastline data type produces the "Coastline Options" pop-up window. A "Color" pulldown menu offers a choice among nine different colors in which a coastline may be displayed on the "Main Chart". Clicking the "Ok" button accepts the indicated color and closes the "Coastline Options" pop-up window. Clicking the "Reset" button restores the previous color.

2.2.3.3 LLT

2.2.3.3.1 Data Display

The display button for LLT displays the LLT location information on the Main Chart and profiles of depth vs. the current parameter on the Profile Chart for the selected data set.

2.2.3.3.2 Data Selection

When the LLT data button is selected, the LLT data selection pop-up window will appear as shown Figure 8. This window contains various user-selectable options and status indicators. The "Reset" button resets all the parameter range values with the previous settings. The "Read" button initiates the retrieval of data from the database using the parameter range values shown in the "selection status" of the pop-up window. The "Remark" section of the "Main

Window" displays "Reading LLT Data" during data retrieval and "finished reading LLT Data" when retrieval is completed. The "Dismiss" button closes the LLT data selection pop-up window.

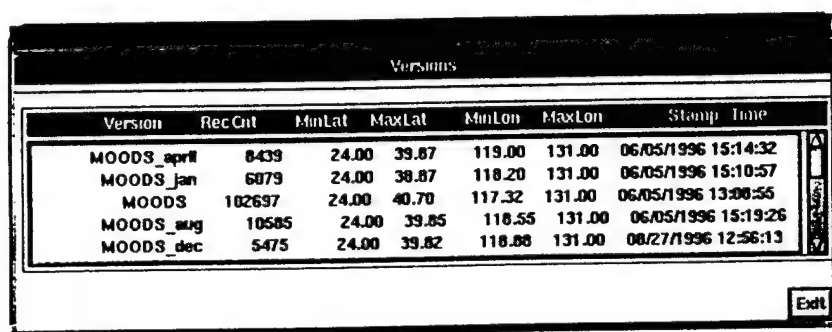Figure 8. The "LLT Data Selection" Pop-Up Window.

The "Selection Status" section displays the currently set minimum and maximum values for the various parameters. When retrieving data from the database the values last displayed in the selection status area will be used. At any given time either the minimum or maximum values can be changed by selecting the "minimum" or the "maximum" button in the selection status area and selecting the desired values from the "Data Selection" area.

The "Data Selection" section of the window allows for setting the minimum and maximum values of the following parameters: class code; instrument type; source code; month; cruise ID; water depth; latitude; longitude; parameters; and time. To set any values, either the "Minimum" or "Maximum" button from the "Selection Status" area has to be selected. The class code, instrument type, source code, and month can be set from their respective scrollable lists, by selecting the desired value on the list.

The parameter can be set by moving the "Number of Parameters" slider bar to the left or right until the desired value is shown. The parameter can have one of the following values:

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- 1-Salinity;
- 2-Temperature;
- 3-Both Temperature and Salinity; and
- 4-Sound Speed.

Cruise id, water depth, latitude, and longitude can be set by typing the required values in the corresponding textboxes and pressing the <return> key. To select a particular version, the "Versions" button is selected. This results in a pop-up list window as shown in Figure 9, from where the desired version can be selected. Time can be set by selecting the "Time" button and setting the time on the "Time Selection" window shown in Figure 10. Once a selection is made, the corresponding "Minimum" or "Maximum" textbox of the particular parameter in the "Selection Status" area will reflect the change.
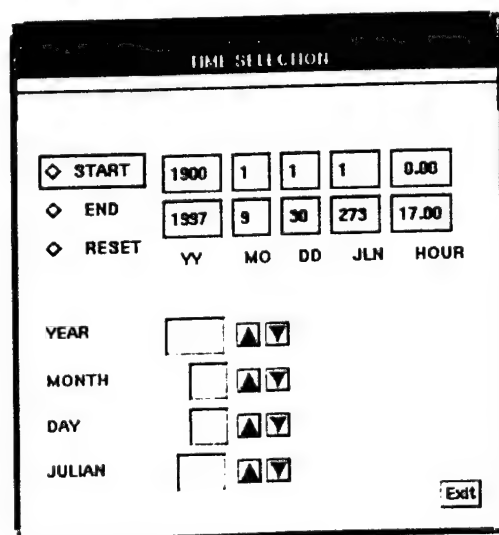

Version	RecCnt	MinLat	MaxLat	MinLon	MaxLon	Stamp Time
MOODS_april	8439	24.00	39.87	119.00	131.00	06/05/1996 15:14:32
MOODS_jan	6079	24.00	38.87	118.20	131.00	06/05/1996 15:10:57
MOODS	182697	24.00	40.70	117.32	131.00	06/05/1996 13:06:55
MOODS_aug	10585	24.00	39.85	118.55	131.00	06/05/1996 15:19:26
MOODS_dec	5475	24.00	39.82	118.88	131.00	08/27/1996 12:56:13

Figure 9. The "Version Selection" Pop-Up Window.

Figure 10. The "Time Selection" Pop-Up Window.

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2.2.3.3.3 Data Options

The "LLT Options" pop-up window illustrated in Figure 11 supports specification of up to three date ranges (=/-) centered on the listed "Center Date" (Julian); colors for plotting LLT dataset profiles; colors for plotting polygons; colors for profile isolation; "On/Off" toggle buttons for locations, profiles, and depths; profile flag settings; point size for data, polygon, and isolate; and line width for data, polygon, and isolate. The Julian center date is automatically calculated from the dataset and listed in the "Center Date" text box. The user can also enter a different center date by entering a new date from the keyboard and pressing the <return> key in the "Center Date" textbox. Below the "Center Date" textbox are three textboxes labeled "+/-", "-" and "+". The value entered in the "+/-" textbox is added and subtracted from the center date to obtain a date range. To further reduce the lower limit of the data range, enter a number into the "- " textbox. Similarly, a number may be entered into the "+" textbox to increase the upper limit of the date range. For each Julian range entered, the user may select a color for displaying profiles falling with that date range, and a color for polygoned profiles within that date range. When clicked, the "Color" button produces a pulldown menu offering nine color options. A color may be selected by dragging the mouse cursor over the desired color and releasing. The selected color will be displayed within the "Color" textboxes. The color is similarly set for profile isolation. The location, profile, and depths On/Off buttons are set by clicking on the respective buttons. The point sizes and line widths can be set by sliding the respective slide bar until the derived value is shown. The desired flagged profiles can be set by clicking the "Profile Flags" button which brings up a pop-up window (See Figure 12) and selecting the desired flags. Clicking the "Reset" button returns all values to their original defaults. Clicking the "Dismiss" button closes the "LLT Options" and "Profile Flags" pop-up windows, accepting the criteria established therein.

2.2.3.4 Volume

2.2.3.4.1 Data Display

The display button for Volume data type displays the Volume location information on the Main Chart and profiles on the Profile Chart for the selected data set.

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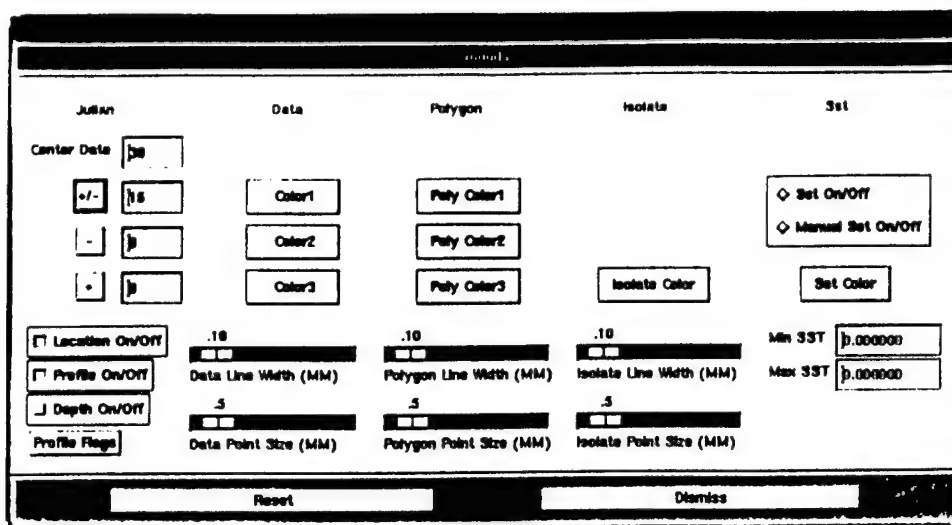
Figure 11. The "LLT Data Options" Pop-Up Window.
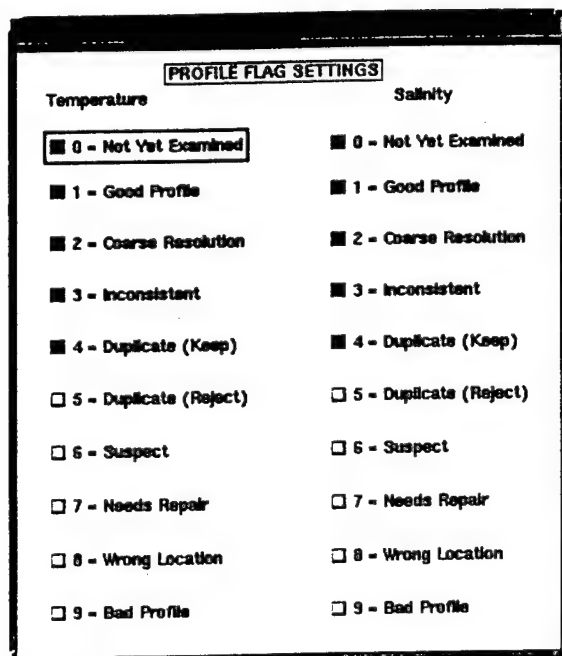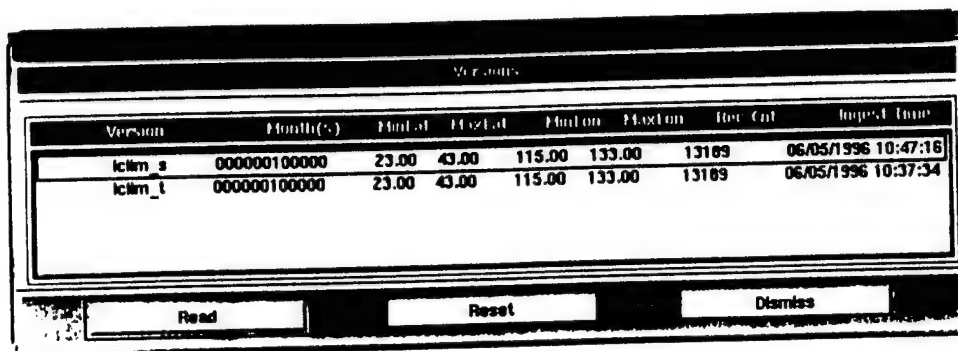
Figure 12. The "Profile Flags" Pop-Up Window.

2.2.3.4.2 Data Selection

When the Volume data button is selected, the "Volume Data Selection" pop-up window will appear as shown Figure 13. This window contains a list of user-selectable versions. A version can be selected from the "Versions" list by clicking on the item of interest. The "Read" button initiates the retrieval of data from the database for the version selected. The "Remark" section of the "Main Window" displays "Reading Volume Data" during data retrieval and "Finished Reading

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Volume Data" when retrieval is completed. The "Dismiss" button closes the Volume data selection pop-up window.

Figure 13. The "Volume Data Selection" Pop-Up Window.

2.2.3.4.3 Data Options

The "Volume Options" pop-up window, as shown in Figure 14, allows for specifying the min, max, and interval values; isoline, location, label, and profiles On/Off flags; isoline, label, profile, polygon, and isolate colors; isoline, profiles, polygon, and isolate line widths; profile, polygon, and isolate point size; label height; and decimal value. The line widths and the point sizes can be set by moving the corresponding slider bars till the desired value is displayed. These settings control the thickness of the lines and points in the Main and Profile Chart areas. The colors can be set from the color pulldown menu while the text values can be set by typing in the corresponding text boxes.

2.2.3.5 Image

2.2.3.5.1 Data Display

The Image "Display" button displays the image for the selected date within the "Main Chart".

2.2.3.5.2 Data Selection

When the Image "Data" button is activated, the "Image Data" pop-up window appears as shown in Figure 15. The pop-up window contains a scrollable list of dated satellite images. An image can be selected by clicking on any one of the listed images. To retrieve the image click the "Read" button. The "Dismiss" button closes the image data selection pop-up window.
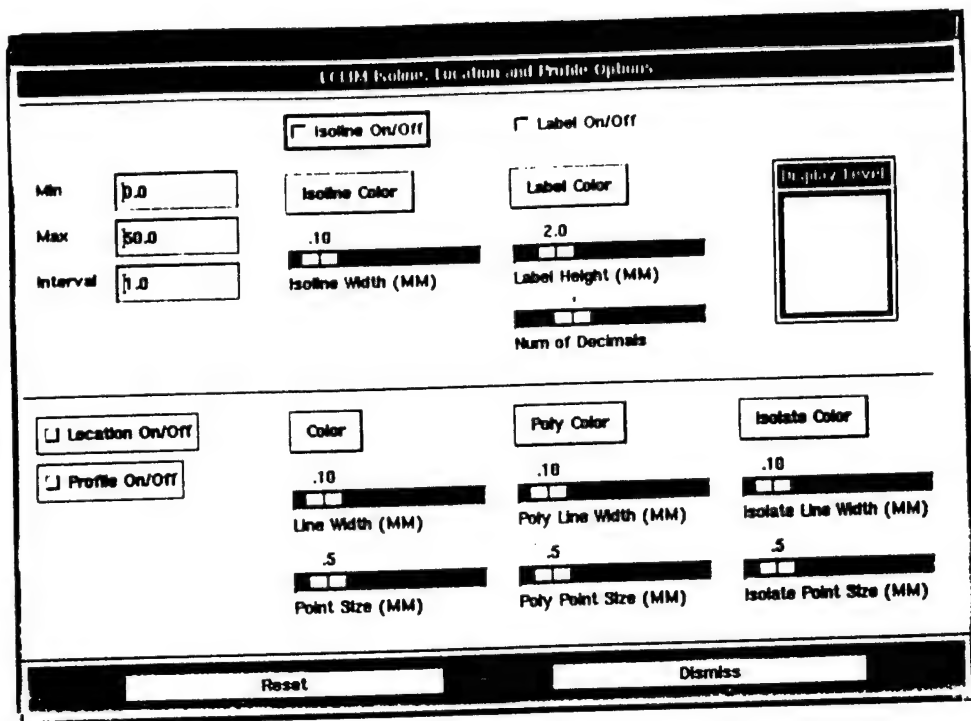
17

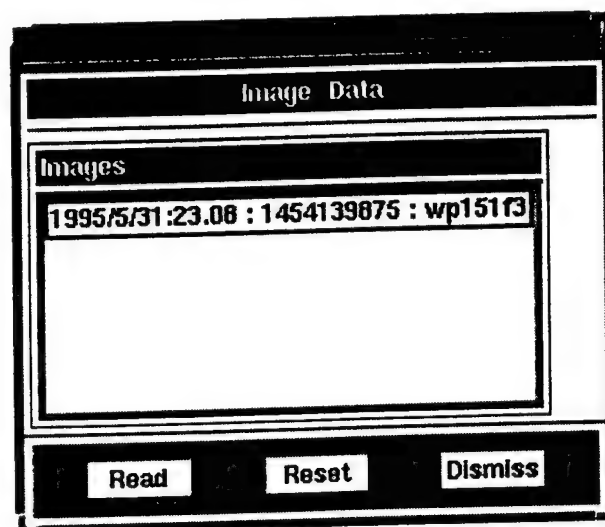Figure 14. The "Volume Data Options" Pop-Up Window.

Figure 15. The "Image Data Selection" Pop-Up Window.

2.2.3.5.3 Data Options

When the Image "Options" button is selected the "Image Shading Scale Options" pop-up window appears, as shown in Figure 16. The min and max data value ranges, and the plotting interval can be set along with selecting either the

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gray scale or color scale shading schemes. The min, max, and interval values can be along with set by typing into the respective text boxes and the shading scale can be set by selecting the corresponding toggle button. The default state can be restored by selecting the "Reset" button. To accept the range and interval select the "Dismiss" button.
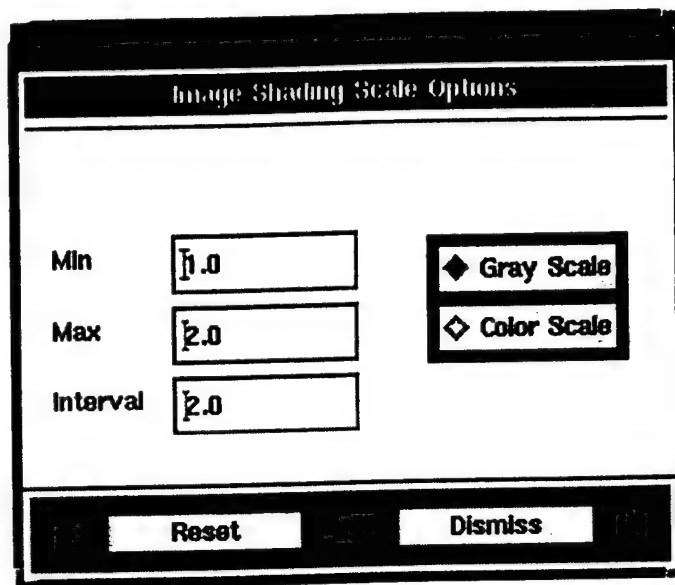
Figure 16. The "Image Data Options" Pop-Up Window.

2.2.4 Data Interactive Module (DIM)

The purpose of the DIM is to support user interaction and manipulation of ocean data. The types of interactive options are changing parameters, exporting, zooming, reference polygon, polygon, polygon subsetting, polygon/zoom options, multiview, interpolation, flagging, transect, single profile, histogram, point information, synthetic profiles, and gridding session. There are also interactive window operations that can be used to manipulate the windows.

2.2.4.1 Parameters

After selecting the "Parameters" button, a pull-down menu appears providing the following parameters: temperature; salinity; sound speed; density; and conductivity. When one of these parameter is selected, the Main Chart" area is redrawn and the "Profile Chart" area is redrawn to show the new parameter vs. depth.

The DIM is located in a row of buttons along the top and bottom of the main window (see Figure 3). Appendix G describes each button.

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2.2.4.2 Exporting

The "Export" button supports the export of LLT, Volume, and Image. After selecting the "Export" button, a pull-down menu appears providing the option to export polygon data, export accumulated subset data, export all data, or to export image data. Accumulated subset data is the accumulation of profile isolated profiles (see Section 2.2.4.6 for profile isolation). After selecting an export type, the export data pop-up window appears as shown in Figure 17. This pop-up window provides all the possible data that can be exported according to this type of export. For each dataset provided for export, the user can provide a header, the export filename, and can turn on and off the datasets to be exported. After entering the header and filename, the user must press the <return> key in both textboxes to accept the changes. At least one of the on/off switches has to be turned on in order to export data. The user can select a binary or ASCII export and can choose the flagged profiles to export. Once all the required information has been entered, click the "Export" button to export the data. To close the window, click the "Dismiss" button.

Figure 17. The "Data Export" Pop-Up Window.

2.2.4.3 Zoom

After selecting the "Zoom" button in the DIM "Analysis Tools" area, the zoom function is activated to specify a sub-region for enlargement within the "Main Chart". To specify the sub-region, use the rubberband technique defined in Appendix A. The "Zoom" function will not work unless the specified sub region is completely visible within the "Main Chart" window. Profiles within the zoomed sub-region will be plotted within the "Profile Composite Chart". To return the "Main Chart" display back to its normal region depiction, select the "Back to Default" button found in the "Window Operations" discussed in Section 2.2.4.17.

2.2.4.4 Reference Polygon

After selecting the "Reference Polygon" button in the DIM "Analysis Tools" area, polygon construction functions become active within the "Main Chart" area. The reference polygon is a dummy polygon which is used as a reference. Section 2.2.4.5 describes how to draw the polygon.

2.2.4.5 Polygon

After selecting the "Polygon" button in the DIM "Analysis Tools" area, polygon construction functions become active. The following rules apply in constructing a polygon:

- The **left mouse button** is used to select the chart for polygon construction. Simply place the mouse cursor within the border of the chart and click the left mouse button.

- The **middle mouse button** is used to establish the corner points of a polygon. Maneuver the cursor to the position desired for a corner point and click the middle mouse button. At least three points must be defined in this manner to create a polygon.

- The **right mouse button** is used to close the polygon, which indicates that the definition of polygon corner points has terminated. The three (or more) polygon corner points will be connected, in the order in which they were created, to form the polygon. If the polygon does not appear to be drawn correctly, click the "Repaint" button from the window operation area located in the lower right corner of the "Main Window" display to remove existing polygons. If less than three corner points were defined before clicking the right mouse button, a

message will appear in the "Remark" textbox stating "Polygon should have at least three points. Start again."

If the polygon is drawn from the "Profile Composite Chart", the profiles that have a depth point inside the polygon will be highlighted. All data within the polygon will be highlighted on all charts.

2.2.4.6 Polygon Subsetting (Profile Isolation)

The "Polygon Subset" pop-up window appears when the "Polygon Subsetting" button is selected from the "Analysis Tools" area. This pop-up window, as shown in Figure 18, allows for isolating individual profiles of the currently displayed data profiles. To list the profiles of a particular data type, click on the corresponding data type button in the "Current Dataset" section of the pop-up window. Individual, multiple, or all profiles can be selected by selecting the "Single", "Multiple", or "All" button from the "List Selecting Policy" section of the pop-up window. To select the profile(s) click on the respective items on the list. The selected profiles are then highlighted in the "Profile Chart" area and their corresponding locations are also highlighted in the "Main Chart" area. The pop-up window also allows the following for the profile(s) selected: flagging; updating database, exporting, and deleting. Click on the "Dismiss" button to exit from "Polygon Subsetting".
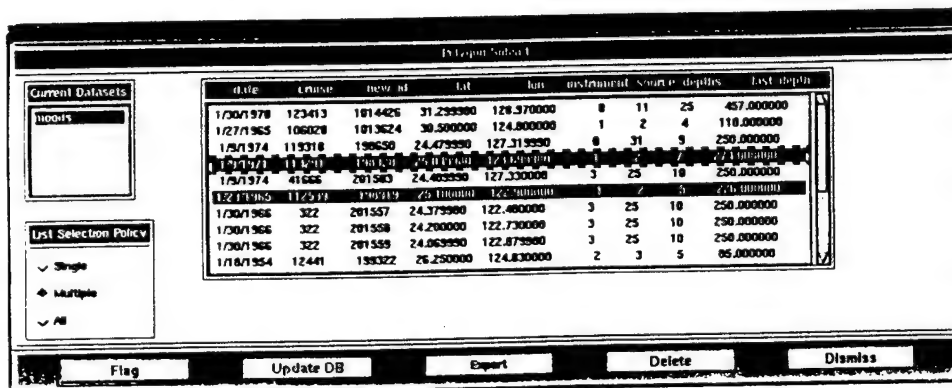
Figure 18. The "Polygon Subset" Pop-Up Window.

The "Flag" button is selected to set a particular flag for the profile(s) isolated, Figure 19. To set a particular flag click on the required button. Only one flag can be set at a time. To reset the flag(s) click on the "Reset" button. To exit from the flag option click on the "Exit" button.

Click on the "Update Db" button to update the database of any changes made to the isolated profile(s). This button only updates the flags.

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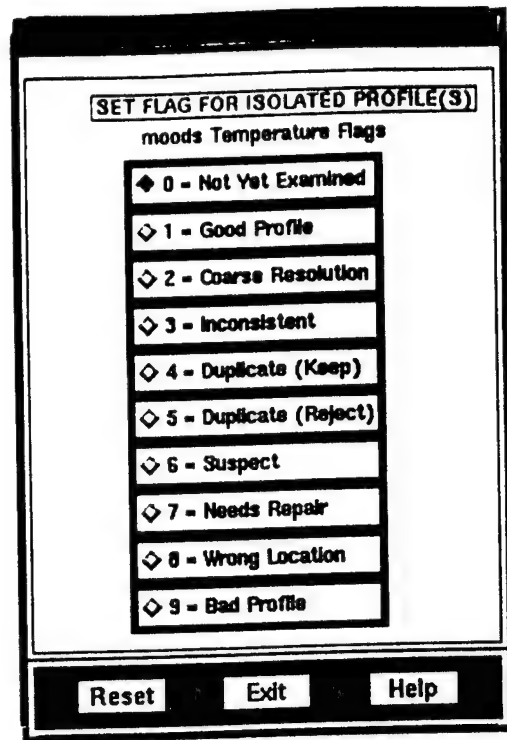
Figure 19. The "Flag" Options Pop-Up Window
for Profile Subsetting.

Click on the "Export" button to export the isolated profile(s). Select "Binary" or "Ascii" to export in the binary or the ascii format. Type the output file name and header information in the corresponding textboxes and press the <return> key in the corresponding textboxes. To export the data, click on the "Export" button. To exit from the export option click on the "Dismiss" button.

Click on the "Delete" button to delete the isolated profile(s). The profiles are only deleted from memory and not from the database, regardless of pressing the "Update Db" button.

2.2.4.7 Polygon/Zoom Options

The "Polygon/Zoom Options" pop-up window, as shown in Figure 20, appears when the "Polygon/Zoom Options" button is selected. It allows for specifying the vertex and edge colors, vertex size, edge line width, and vertex symbol for the polygons. The colors can be set by selecting the required value from the corresponding color pull-down list. The vertex size and the edge line width size can be set by moving the corresponding slider bars until the required values are shown. The vertex symbol can be set from the symbol pull-down list. The zoom options consist of the selection between "Zoomed Profiles Only" and

"Overlay Zoomed Profiles" and specifying the nearest degree to zoom to. If the "Zoomed Profiles Only" button is selected, only those profiles within the zoom subregion of the "Main Chart" will be plotted in the "Profile Composite Chart". If the "Overlay Zoomed Profiles" button is selected, profiles within the Zoom sub-region will be plotted on the top of any existing profiles within the "Profile Composite Chart". To exit from this options window select the "Dismiss" button.
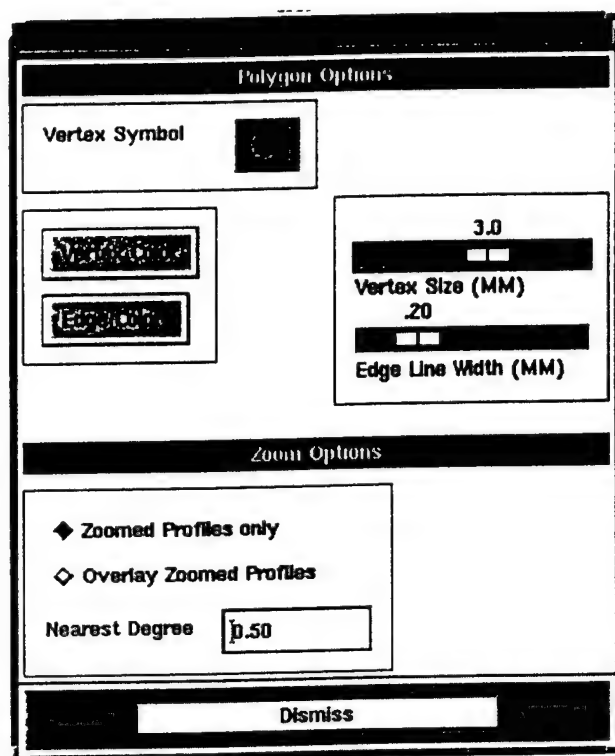
Figure 20. The "Polygon/Zoom Options"
Pop-Up Window.

2.2.4.8 Multiview

By default the "Main Window" has two charts: the "Main Chart" and the "Profile Chart." The profile chart is used to show the comparison between one of the five parameters and depth. NIDAS provides the capability of comparing more than one parameter simultaneously through "Multiview." When the "Multiview" option is selected, the "Main Chart" and the "Profile Chart" areas are divided into six smaller chart areas. The smaller charts represent the main chart area, temperature vs. depth profile area, temperature vs. salinity profile area, salinity vs. depth profile area, sound speed vs. depth profile area, and density vs. depth profile area. All the operations which were valid previously for the "Main Chart" and "Profile Chart" areas are valid on all of the windows of Multiview.

2.2.4.9 Interpolation

To interpolate the displayed LLT data to a contour, select the "Interpolation" button from the LLT Tools Action area. At least one LLT dataset must be displayed to perform interpolation. Selecting the "Interpolation" button will bring up the "Interpolation Selection" pop-up window. Select the interpolation routine desired. (Only one interpolation routine is available which is "Charter" provided by NAVOCEANO. "Other" routines could be added at a later date.) If there is more than one LLT dataset displayed, then they are listed in the "LLT Datasets" list. Select a dataset by clicking on one of the datasets in the list. Select the "Data" button to bring up the "Charter Values" pop-up window as shown in Figure 21. This window allows the setting of the grid interval, lower left and upper right latitudes, lower left and upper right longitudes, depth and smooth value. The depth value can be set by selecting the desired value from the "Depth" list, while the smooth value can be set by selecting the "Smooth" button. The rest of the data values can be set by typing in the corresponding text boxes. To register the values and start the interpolation process, select the "Apply" button. To exit from this window without doing anything select the "Dismiss" button. The "Help" button provides on-line help on this topic.

Figure 21. The "Charter Values" Pop-Up Window.

After the LLT data has been interpolated, a toggle button named "INTER" is registered in the "Display On/Of Toggle Buttons" area and is treated just like a regular bathymetry dataset. To display the interpolated contour, select the "INTER" toggle button.

Clicking on the "Options" button from the "Interpolation Selection" window brings up the "Bathymetry Isoline Options" window shown in Figure 6. This window is described in detail in Section 2.2.3.1.3. For the interpolated data, a land making option is added to the option window.

2.2.4.10 Flagging

LLT profiles are flagged through the profile isolation dialog (Section 2.2.4.6). After one or more profiles have been isolated, one of ten flags can be set: not yet examined (default), good, coarse resolution, inconsistent, duplicate (keep), duplicate (reject), suspect, needs repair, wrong location, or bad profile.

There are two ways to update the database of the flag changes: the "Update DB" button from the profile isolation dialog or the "Update Flags" button from the "LLT Tools" area. Updating from the profile isolation dialog updates the database with one flag grouping at a time. This is a "flag-update, flag-update" process. Updating the "LLT Tools" area updates the database of all accumulative profile isolation flagging. This is a "isolate-flag, isolate-flag, update" process.

Selecting the "Update Flags" button from the "LLT Tools" area results in the displaying of the "Update Database Facility" pop-up window. The window contains a list of toggle buttons for each dataset along with an on/off toggle button for update. To update a dataset, select the corresponding toggle button and select the "Update" button. Select the "Dismiss" button to exit from the pop-up window.

2.2.4.11 Transect

To perform transections of the displayed data select the "Transect" button from the "Volume Tools" area. When the "Transect" button is clicked, the "Main Chart" is activated for the definition of a transecting slice thought the dataset. Use the middle mouse button to define the starting and ending points for the transect. Then click the right mouse button to indicate completion of the endpoint definition. The "Transect Selection" pop-up window as shown in Figure 22, will then appear. Within the transect options pop-up window, select the desired dataset from the list. The spacing, minimum depth, maximum depth, and contour interval values can be changed by entering the values into the corresponding textbox and pressing the <enter> key. Click the "Apply" button to close the transect options pop-up window and bring up a graphical plot of the transect. To close the transect graphical plot display pop-up window, click anywhere within its boundary. Click on the "Dismiss" button to exit from the "Transect Selections" window.
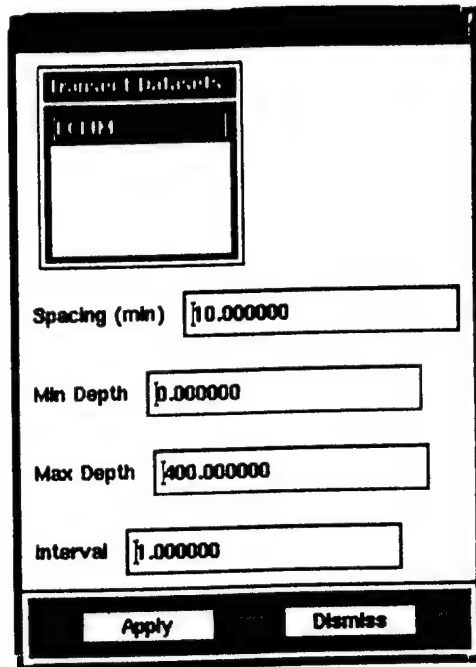
Figure 22. The "Transect Selections" Pop-Up Window.

2.2.4.12 Single Profile

To use the "Single Profile" feature from the "Volume Tools" area, a Volume dataset must be displayed and a polygon drawn. Once the "Single Profile" button has been selected, a point can be identified by clicking the middle mouse button inside a pre-existing polygon in the "Main Chart". A triangle will be plotted at the position where the cursor was clicked. A single Volume profile will be plotted in the "Profile Chart" for each point identified in the "Main Chart". More than one point inside the polygon can be selected and all selected points will be displayed on the "Profile Chart".

2.2.4.13 Histogram

To use the "Histogram" feature from the "Image Tools" area, an image has to be displayed. When the "Histogram" button is selected the "Image Histogram" dialog is shown. An Image Histogram is drawn in the drawing area of the pop-up window. To set the temperature ranges, there are two toggle buttons. Click on the "Min Temperature" toggle button and then click inside the axes for a temperature value to set the min temperature. Click on the "Max Temperature" toggle button and then click inside the axes for a temperature value to set the max temperature. Select the "Dismiss" button to exit from the pop-up window.

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2.2.4.14 Point Info

To use the "Point Info" feature from the "Image Tools" area, an image has to be displayed. To get the pixel value of a particular point inside the image, click the middle mouse button on that point. A pop-up window appears providing information such as latitude, longitude, pixel value, and temperature. An error message, "Clicked point outside image", appears in the remark area if the point is outside the image area.

2.2.4.15 Synthetic Profile

When the "Synthetic" button is selected, the "Synthetic Profiles Selection" pop-up window appears in shown in Figure 23. This window supports the creation of a province area and synthetic profiles. To draw a province, select the "Province" toggle button and use the middle mouse button to mark the vertex on the "Main Chart" area. Use the right mouse button to complete the polygon. The rest of the features pertain to the "Profile Chart" area.
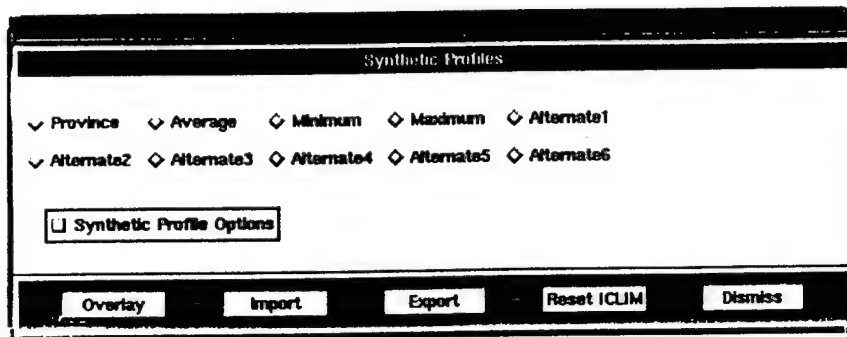
Figure 23. The "Synthetic Profiles Selection" Pop-Up Window.

Synthetic profiles can be constructed for an average profile, minimum profile, maximum profile, and six alternative profiles. Select one of the profile buttons to construct the profile. Use the left mouse button to create points on a profile in the "Profile Chart" area. Use the middle mouse button to end the creation. This will result in a pop-up window giving the option whether to save the synthetic profile or not. Use the right mouse button to quit and cancel new profile creation.

When the profile creation is complete, the "Overlay" button will clear the main chart and the profile chart area of any excess polygons and profile lines and overlay the new profiles on the profile chart area.

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When the "Export" button is selected, the "Export Synthetic Profiles" pop-up window appears. The file name, latitude, longitude, year, month, day, hour, province number, and the region code can be specified here by typing the values into the respective text boxes. Clicking on the "Export" button in this window will export the profile(s). There is also an option to save the file in a database directory. This is accomplished by selecting the "Save in Database directory" toggle button. The file is saved in a database directory which can be imported back into NIDAS. To exit from "Export" select the "Dismiss" button.

When the "Import" button is selected, a file selection pop-up window appears. This window allows the user to select one set of synthetic profiles to be stored in memory. Select the set of synthetic profiles by clicking on the set of interest. Select the "Ok" button to import the profiles. To exit, select the "Cancel" button.

Select the "Synthetic Profiles Options" toggle button to set the options for synthetic profiles. This results in the pop-up window as shown in Figure 24. This window allows the user to set the first and last depth values, depth on/off flag, line color, line widths, and line styles for the different types of profiles. The colors can be set by selecting from the list of pulldown colors for each of the profiles. The line widths are set by moving the slider bar until the desired value is obtained for each of the profiles. The line styles are set by selecting from the list of pulldown choices for each of the profiles.

When the "ResetICLIM" button is selected, the synthetic profiles are cleared for the profile type (average, minimum, ...) that is selected.

2.2.4.16 Grid Editing

"Grid Editing" provides a way to edit volume data. When a volume needs to be edited, it is converted into an active LLT dataset (See Appendix C, Section 2.2.2.2.2). When the "Session" pulldown in the "Gridding" tools area has been selected, three options appear: Read, Edit, and Store. When "Read" is selected, the active LLT dataset is read into memory.

When a polygon has been drawn and the "Edit" button is selected, the "Polygon Subset" dialog appears as shown in Figure 25. This dialog is the same dialog as the profile isolation dialog except instead of selecting a dataset, you select an "Editing Policy" and an "Edit" button has been added. The rest of the functions in this dialog are described in Section 2.2.4.6.

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Figure 24. The "Synthetic Profiles Options" Pop-Up Window.

Figure 25. The "Grid Edit" Pop-Up Window.

The edit policy of "New Synthetic" is used to edit the whole profile. When selected and the edit button pressed, a line is drawn on the "Profile Chart" area at every depth for the selected profile. Use the left mouse button to start creating new points for the specified depths. Use the middle mouse button to finish the create mode and save the new profile. Use the right mouse button to cancel the new synthetic mode.

The edit policy of "Partial Synthetic" works just like the "New Synthetic" except the area to edit is specified by providing a start and an end point. When selected and the edit button is pressed, use the left mouse button to specify a start and an end point on the profile selected to specify the range to edit. Use the middle mouse button to start editing which is done similar to "New Synthetic". Use the right mouse button to cancel the edit mode.

When the "Store" pulldown button is selected, a pop-up window is created to ask if the edited LTT is to be stored in the database. Selecting "OK" will replace the old LLT with the new edited LLT.

2.2.4.17 Window Operations

The window operations are applied to the current active window. The active window is indicated by a blue border around the window. Possible active windows are the "Main Chart" window, the "Profile Chart" window, or any one of the six multiview windows (see Section 2.2.4.8).

When the "Repaint" button is selected, the active window is cleared of all polygons and isolated profiles. The original data is restored to the window.

Selecting the "Default" button will return the currently selected window to its default state. The effect of any zoom operation done is removed. The location plot or the profile plots are drawn according to the original scale values.

Selecting the "Window Options" button will bring up a pop-up dialog for the "Main Chart" window, as shown in Figure 26, or any of the profile windows as shown in Figure 27. This dialog allows the setting of some axis options, text marker, and title options (profile window only). Select the "Apply" button to apply the values to the window.

When the "Last Polygon" button is selected, the current polygon and other user graphics is removed and the previous polygon is redrawn. When the polygon is redrawn it is treated as though the user just drew the polygon.

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Figure 26. The "Window Options" Pop-Up Window
For The Main Chart Window.

Selecting the "ErasePoly" button will erase any polygon drawn on the active window.

To perform enhancements of the active window, select the "Plot Enhancement" button. This will bring up the "Enhancement Dialog" pop-up window. This window will allow the user to change the pixel width and height of the window. Enter the new value in the textbox and press the <enter> key. After setting these values and the "Apply" button selected, an enhanced window is drawn using the new pixel width and height. Select the "Dismiss" button to exit from the enhancement dialog window. Use any mouse bottom in the enhanced window to close the window.

Figure 27. The "Window Options" Pop-Up Window
For The Profile Chart Window.

The "RepaintAll" button is similar to that of the "Repaint" button in the "Window Operations" area. In this case, the effect of the operations is felt across all the windows and not just the currently selected window.

3.0   ERROR MESSAGES

Some of the user error messages and a small description of the message are provided below. If there are any other problems with NIDAS that the Database Administrator cannot fix, contact the NAVOCEANO POC, Mr. Steve Haeger, 601-688-4457; 601-688-5485 (fax) or for user/technical support 601-688-3085; 601-688-7100 (fax) or email: abbott@cast.msstate.edu.

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3.1 Starting NIDAS

"Error from db_start" - NIDAS could not open and start the database. Contact the Database Administrator.

3.2 Reading Data

"No versions available" - There are no versions in the database for the data type you have selected. Ingest data first and then try to read it.

"Number of Versions is limited to 12" - You can select multiple versions when reading data, but the number of versions is limited to 12. Select your versions again.

"No data available for given conditions" - No data meets the minimum and maximum criteria. Increase the range on the minimum and maximum.

"Multiple Versions, DB Update Disabled": - When multiple versions are read in, the flag updating is disabled. You can flag the data but you will not be able to update the database.

3.3 Polygon

"Polygon should have at least three points. Start again" - In order to create a polygon, you must have at least three points. "Repaint" and start the polygon again.

3.4 Zoom

"Zoom is not done correctly" - In order to zoom, you must make a rectangular box around the area to zoom. If you make a line, this message will be given.

3.5 Export

"Display of some datasets is required to export data" - At least one type of data has to be read into memory and displayed on the "Main Chart" in order to export data.

"Polygon has to be drawn to export data" - The "Export" utility exports data that has been polygoned. Draw a polygon, then export.

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"Error. File name should start with alphabetic character only" - The filename provided to the export utility must start with a character from a/A to z/Z.

"Open file error, for writing in */n_export" - The "*" stands for the value in the environment variable "NIDAS3_EXP". Check this variable and make sure it is pointing to a valid directory and that directory contains another directory called "n_export".

3.6   Interpolation (Charter)

"At least 1 LLT Data Set must be displayed first before interpolation" - At least one LLT has to be read in and displayed on the "Main Chart" in order to interpolate data.

"Display of Temperature or Salinity required" - The interpolation utility requires that either temperature or salinity be the parameter being displayed. This can be checked by looking at the "Profile Composite Chart" and seeing what the title is. It needs to be either "Temp vs. Depth" or "Sal vs. Depth".

"All Charter fields must be entered" - All of the values on the "Charter Values" pop-up window must be provided. One or more values has been left out.

"Lat/Lon fields must include a "."! (ex: Degrees.Minutes)" - The latitude and longitude must have a "." to separate the degrees from the minutes.

"Open file error, for writing in temp file" - This temp file is being opened for writing in the "/tmp" directory. Make sure that you can write to this directory and that there is not a file by the name of "charter_script".

"Error from split-b - Contour not created" - Something is wrong with the split-b program. Split-b is part of the interpolation utility and it is an executable. Make sure it is in your executable path. Also make sure that you can write to the "/tmp/" directory and in the current directory. The current directory is the directory that NIDAS was started from.

"Error from chrtr8 - Contour not created" - Something is wrong with the chrtr8 program. Chrtr8 is part of the interpolation utility and it is an executable. Make sure it is in your executable path. Also make sure that you can write to the "/tmp/" directory and in the current directory. The current directory is the directory that NIDAS was started from.

4.0 NOTES

4.1 System Considerations

NIDAS is intended for installation in and execution by Sun Microsystems, Incorporated computing platforms. Installation is site specific and tailorable to the environment. Appendix E provides information specific to installation of NIDAS with the NAVOCEANO computing environment. NIDAS may be executed from an X-terminal: however, some graphical screens produced by NIDAS are memory intensive and will cause termination of the software if X-terminal memory is insufficient.

4.2 System/Software Requirements

NIDAS is an integrated software system that requires the presence of both specific commercial off-the shelf software and government-provided software.

- NIDAS was designed for execution under control of the UNIX operating system on Sun Microsystems hardware.

- NIDAS requires the presence of the X-Windows client-server environment.

- The Open Software Foundation's (OSF) Motif Toolkit (library) must be present and available in the execution environment.

- A routine version UNIRAS ag/X Toolmaster software must be installed on the system and available in the execution environment to support NIDAS graphical display options.

- The Oracle relational database engine must be installed on the system and available for execution as the vehicle for accessing data contained in the NIDAS database.

- Of interest to programmers, the software code for this version of the NIDAS was compiled using C and Fortran Compilers.

- NIDAS is an interactive application. It supports all standard X-Windows mouse and keyboard functions.

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4.3 Directory Map

NIDAS software executables have been designed to execute using directory paths defined via UNIX environmental parameters and path names defined within user "login" or "cshrc" files. These parameters must be determined during installation since they are system dependent.

4.4 Security

NIDAS neither supports nor restricts the overall classification of the computing environment; however, classification codes are contained in the header information of each profile. The NDBA controls access to NIDAS data by authorizing levels of access based on the clearance held by individual users.

APPENDIX A

Glossary of Terms

Bathymetric - of or pertaining to the depth of the ocean.

Button - When used in relation to the mouse device, a button is one of three pressure switches, which may be pressed (clicked) to control some feature of the screen display. When used in relation to the monitor display, a button is a labeled area of the on-screen graphical design that resembles a switch which can be made active by pressure.

Click - The act of pressing a button on the mouse. The term "click on", or simply "click", is frequently used to indicate that the user should maneuver the mouse cursor to a specified location on the screen (usually an area designed to resemble a button) and controlled from the keyboard, press (click) the appropriate button on the mouse.

Computer Software Configuration Item (CSCI) - a software application or a major component thereof.

Computer Software Component (CSC) - a top level functional module within a computer software configuration item (CSCI). CSC's are generally considered to be one structural level below the CSCI.

Cursor - A graphical symbol that identifies a portion on a computer monitor screen. A cursor is sometimes controlled by moving a mouse device; otherwise, it is controlled from the keyboard, usually with the arrow keys.

Data Interactive Module (DIM) - NIDAS module that performs data manipulation functions and processing required for display and interpretation of data.

Data Retrieval Module (DRM) - NIDAS module responsible for identifying, obtaining and formatting data obtained from the NIDAS (NEONS) database.

Display - Synonymous with the computer monitor screen; also, to demonstrate or to show.

Drag - The act of pressing and holding a button on the mouse device and moving the mouse to control a cursor's position on the monitor screen. The purpose of

dragging the mouse device is to define an area on the screen or to move a graphical object to another location on the screen.

Graphical User Interface (GUI) - NIDAS module responsible for interfacing with the user and controlling the functionality of the main NIDAS display.

Julian - The day of the year according to the Julian calendar which begins on January 1. A Julian date does not include a year as part of its simple format.

List - A simple series of words or numerals.

Listbox - An outlined area of the display which contains a list of textual information. Selection of text within a list is accomplished by placing the mouse cursor over the appropriate entry and clicking a button on the mouse.

Metadata - Information about a dataset, either descriptive or definitive as to quantity, quality, quantity or format.

Mouse - A hand controlled device used to interact with images displayed on the computer monitor screen. When a mouse is moved, a cursor on the screen moves in the same direction as the mouse. One or more buttons may be present on a mouse for invoking an action on screen at the corresponding cursor position.

Profile - A sequential listing of parameters keyed to a reference structure. A bathymetric profile contains sequential depth/parameter groups.

Pull-Down Menu - A listing of procedural options that appears in response to activation of an appropriately labeled (visible) button referred to as the menu header. Options are selected by clicking on the menu header to display the options, followed by clicking the button labeled to indicate the desired option.

Rubberband - The act of dragging the mouse to define an area on the screen. A mouse button is pressed and held while the mouse is maneuvered to position the on-screen cursor at a desired final position; then, the mouse button is released.

Screen - The display surface of a computer video monitor where images appear.

Scroll Bar - The graphical image of a narrow bar with arrows embedded at both ends and, optionally, a movable (sliding) button between them. The scroll bar is used to position a portion of an image or text for viewing inside a bound area that is smaller than the whole image or text. Scrolling is accomplished by placing the mouse cursor on one of the arrows and pressing the mouse button. Scrolling may also be accomplished by placing the mouse cursor over the sliding

button (if present) and dragging the sliding button to a new position along the bar.

Textbox - An outlined area of the display that contains textual information. Text in a textbox may sometimes be edited; however, the usual purpose of a textbox is to provide information to the user.

Widget - ".....a graphical device capable of receiving input from the keyboard and the mouse and communicating with an application or another widget by means of a callback. Every widget is member of only one class and always has a window associated with it."(from: OSF/Motif Programmer's Guide , Rev. 1.1 Open Software Foundation, Prentice Hall, Englewood Cliffs, NJ, 1991, p. GL-13.)

Window - An outlined area of the screen whose contents are confined to the outlined boundary and controlled by user interaction (with buttons, menus, etc.). A window is usually a top level structure closely tied to the operating environment of the computer.

Zoom - The graphical scaling process whereby a screen display item is enlarged or reduced in size.

APPENDIX B

List of Acronyms

ASCII - American Standard Code for Information Interchange
CAST - Center for Air Sea Technology
CLIMO - Climatology
CSC - Computer Software Component
CSCI - computer software configuration item
DBDR - Database Design Requirement
DBFR - Database Functional Requirement
DOD - Department of Defense
DIM - Data Interactive Module
DRM - Data Retrieval Module
GUI - Graphical User Interface
Lat - latitude
LLT - Latitude Longitude and Time
Lon - longitude
Max - Maximum
Min - Minimum
MSU - Mississippi State University
MOODS - Master Oceanographic Observation Data Set
NASA - National Aeronautics and Space Administration
NAVOCEANO - Naval Oceanographic Office
NDBA - NIDAS Database Administrator
NDMS - NIDAS Data Management System
NEONS - Navy Environmental Operational Nowcast System
NDR - NIDAS Data Requirement
NFR - NIDAS Functional Requirement
NIDAS - Naval Interactive Data Analysis System
OSF - Open Software Foundation
RDBMS - Relational Database Management System
Sal - salinity
Snd speed - sound speed
SQL - Structured Query Language
Temp - temperature
3-D - Three-Dimensional

APPENDIX C

NIDAS Region Configuration System

1.0 System Overview

The NIDAS Region Configuration System (NRCS) is a tool that provides facilities for defining geographical regions. NRCS also provides for defining different environmental data types and formats for each defined project area. The following sections describe in detail the use of the tool and its functionality.

2.0 Execution Procedures

2.1 Initialization (Launching the Application)

NRCS observes the standard procedure for executing an application in the UNIX/X-Windows environment. At the UNIX command line prompt, enter *nrcs*. When X-Windows initialization procedures are complete the NRCS GUI or "Main Window" display will appear (e.g., If using "toms Window manager"-"twmrc", a window skeleton appears on screen which must be maneuvered to the desired position on the monitor screen with the mouse. If using "motif window manager"- "mwmrc", the position of the main display is predefined and appears without any further action after entering *nrcs* from the keyboard. Other window managers may involve different user action before "Main Window" display appears.).

2.2 Description of Display Windows

The screen displays of NRCS are X-Windows client window objects. Window control adheres to X-Windows procedures. As illustrated in Figure 1, the main window consists of a project area list, dataset list, globe map, menu bar, function buttons, and remark area. Predefined project areas are listed in the project area list. When a particular project area is selected any datasets defined for that project area are listed in the dataset list. The globe map displays a coastline of the entire world. By using the mouse, any area in the globe may be selected. The function buttons allow the following operations: project area information; dataset information; add project area; add dataset; delete project area; delete dataset; and zoom. The remark area displays the current status of any user interaction with the tool.
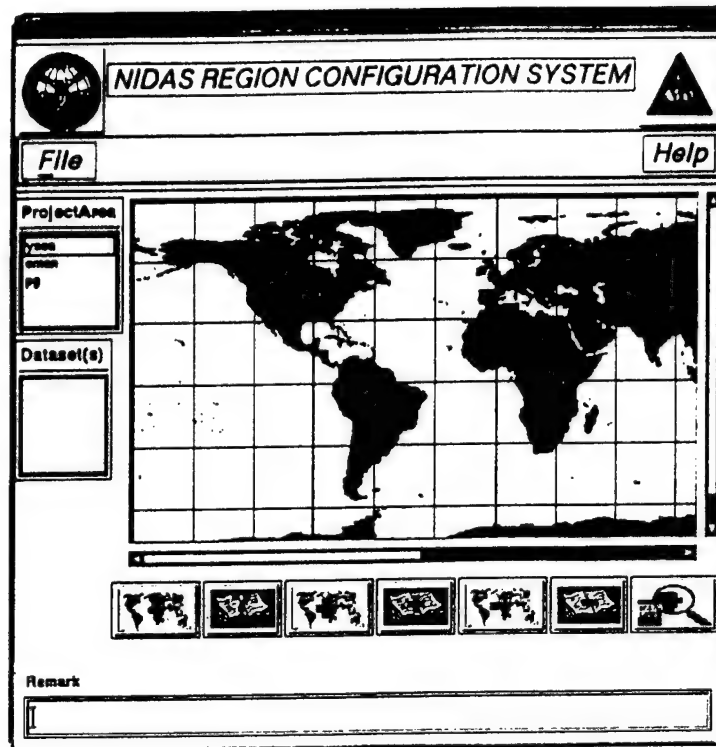
Figure 1. Illustration of the NRCS Main Window

2.2.1 File Pulldown Menu

When the "File" button is selected from the menu bar, a pulldown menu appears with the choice of Reset and Exit. Selecting the "Reset" option will remove any user interaction with the globe map, as well as any selection made in the project area list and the dataset list. Selecting the "Exit" option will exit from the application.

2.2.2 Function Buttons

The function buttons are composed of the following buttons: project area information, dataset information, create project area, create dataset, delete project area, delete dataset, and zoom.

2.2.2.1 Project Area Information

To retrieve project area information, first a project area must be selected from the project area list. Then click on the "Project Area Info" button (refer to Appendix G for a description of buttons). This will bring up the "Project Area Info" dialog shown in Figure 2. The dialog contains the project area, description,

creator, date of creation, project name, and classification. When the "GeogLoc" button is selected from this dialog, the "Project Boundary Info" dialog, also shown in Figure 2, is displayed. This dialog contains the min/max latitude and longitude. To exit from the "Project Area Info" option select the "Exit" button from the "Project Area Info" dialog.

Figure 2. "Project Area Info" Dialog.

2.2.2.2 Dataset Information

To retrieve dataset information, a project area and dataset must be selected. (The datasets are given once the project area is selected.) Then click on the "Dataset Info" button (refer to Appendix G for a description of buttons). This will bring up the "Dataset Information" dialog shown Figure 3. The dialog displays the dataset, data type, classification, creator, date of creation, and description. To exit from the "Dataset Information" option, click on the "Exit" button. The "Details" and "Options" buttons provide greater details on the dataset based on data type (LLT, Volume, Bathymetry, or Image).

Figure 3. "Dataset Information" Dialog

2.2.2.2.1 LLT

When the "Details" button is selected, the "LLT Data Information" dialog, shown in Figure 4, is displayed. This dialog displays information such as range, color, and polygon color for three time range subsets and flag value toggle buttons for location, profile, and depth. The LLT data type does not have any "Options".

Figure 4. "LLT Data Information" Details Dialog.

2.2.2.2.2 Volume

When the "Details" button is selected, the "Volume Data Information" details dialog shown in Figure 5a, is displayed. This dialog displays information such as min/max latitude and longitude, north-south and east-west resolutions (in

degrees), number of rows, number of columns, number of depths, depth values; climatology flag, and input grid flag. The input grid flag specifies this data as being input for an LLT data type. When selected, the "InputGrid" button becomes active which brings up a dialog providing the selection of a version to be used as the input. Once the version is selected, it is converted and stored in a LLT dataset called <original_dataset_name>_prof.

When the "Options" button is selected, the "Volume Data Information" options dialog shown in Figure 5b, is displayed. The dialog presents the min, max, and interval values; transect max, transect space, and transect interval values; and color values.

Figure 5a. "Volume Data Information" Details Dialog

Figure 5b. "Volume Data Information" Options Dialog.

2.2.2.2.3 Bathymetry

When the "Details" button is selected, the "Bathy Data Information" details dialog shown in Figure 6a, is displayed. This dialog displays information such as min/max latitude and longitude, row count, column count, and horizontal resolution.

When the "Options" button is selected, the "Bathy Data Information" options dialog shown in Figure 6b, is displayed. This dialog presents information such as min, max, interval values, and color values.

Figure 6a. "Bathy Data Information" Details Dialog

Figure 6b. "Bathy Data Information" Options Dialog.

2.2.2.2.4 Image

When the "Details" button is selected, the "Image Data Information" details dialog shown in Figure 7a, is displayed. This dialog displays information such as satellite, band, and sensor.

Selecting the "Options" button would display the "Image Data Information" options dialog shown in Figure 7b. This dialog contains the min, max, and the interval values.

Figure 7a. "Image Data Information" Details Dialog.

Figure 7b. "Image Data Information" Options Dialog.

2.2.2.3 Project Area Create

To create a new project area, click on the "Project Area Add" button (refer to Appendix G for a description of buttons). This will bring up the "Project Area Create" dialog similar to the information dialog in Figure 2. The project area name, description, and the project name can be specified by typing into the respective textboxes and pressing the <enter> key. The creator and the date are automatically assigned. Selecting the "GeogLoc" button will bring up the "Project Boundary Create" dialog which allows the user to specify the min/max latitude and longitude values by typing into the respective textboxes and pressing the <enter> key. The latitude and longitude values can be automatically assigned either from the globe map or from another project area. In order to use the globe map, just rubberband a region on the map with the mouse. The region can be fine adjusted through the zoom discussed in Section 2.2.2.7. When the region is selected, then select the project area add button. In order to use another project area's values, just select the project area from the project area list and

select the project area add button. Once all the values are supplied, the add button should be made active. If not, make sure that all the textboxes have values and that the <enter> key has been pressed in all the textboxes. Select the add button. This will result in a new project area being created and its information stored in the database.

2.2.2.4 Dataset Create

To add a new dataset, a project area must be first selected from the project area list. Then click on the "Dataset Add" button (refer to Appendix G for a description of buttons). This will bring up the "Dataset Add" dialog similar to Figure 3. The dataset name, class, type, and description can be specified in this dialog. To specify the data type, click on the "DataType" button and then select the appropriate data type from the resulting pop-up menu. The rest of the values can be specified by typing into the respective textboxes and pressing the <enter> key. The creator and the date are automatically assigned. Once the data type has been selected, a dialog pops up with the details for the specified data type. The "Options" button provides the options dialog for the data type specified. These dialogs are similar to those in Figures 4 through 7. Textbox information is entered directly into the textbox and then the <enter> key pressed. Colors are selected by pressing the color button and selecting from the pulldown menu.

Volume has one added button on the details dialog to handle depth values. The number of values can be large so there is a "depths from file" button to read the depth values from a file. The file format is just a simple text file with one depth value per line.

When all the information is specified, select the "Add" button from the "Dataset Add" dialog. This will result in a new dataset being created and stored in the dataset.

2.2.2.5 Project Area Delete

The "Project Area Delete" button (refer to Appendix G for a detailed description of buttons) deletes the specified project area and its associated datasets from the database. The dialogs that appear as a result of selecting the "Project Area Delete" button are very similar to that which appear for the "Project Area Information" button. Selecting the "Delete" button from the "Project Area Delete" dialog will delete the project area and its associated datasets from the database. To exit from the "Project Area Delete" option, select the "Exit" button.

2.2.2.6 Dataset Delete

The "Dataset Delete" button (refer to Appendix G for a description of buttons) deletes the specified dataset from the database. The dialogs that appear as a result of selecting the "Dataset Delete" button are very similar to that which appear for the "Dataset Information" button. Selecting the "Delete" button from the "Dataset Delete" dialog will delete the dataset from the database. To exit from the "Dataset Delete" option, select the "Exit" button.

2.2.2.7 Zoom

In order to zoom into a region, the region must be specified. The region can be specified by rubber banding a region on the globe map or by selecting a project area. Then click on the "Zoom" button. This will result in a zoomed version of the selected region. The zoomed display shows the latitude and longitude of the mouse pointer. If a greater zoom is required, rubberband the region inside the zoomed display. Then press the right mouse button. This will close the zoomed display. Then select the zoom button again. The zoomed area should be the new region.   Press the right mouse button inside the zoomed display to exit.

APPENDIX D

DATABASE ADMINISTRATOR TOOLS

1.0 SYSTEM OVERVIEW

The Database Administrator Tools (DBATools) application is a tool that provides facilities for performing various database administrative functions for NIDAS. Among the facilities provided are database access control, table maintenance, and data maintenance such as inventory, delete, and ingest. The following sections describe in detail the use of the tool and its functionality.

2.0 EXECUTION PROCEDURES

2.1 Initialization (Launching the Application)

DBA Tools observes the standard procedure for executing an application in the UNIX/X-Windows environment. At the UNIX command line prompt, enter *nidas_dba*. When X-Windows initialization procedures are complete the DBA Tools GUI or "Main Window" display will appear (e.g., If using "toms Window manager"- "twmrc", a window skeleton appears on screen which must be maneuvered to the desired position on the monitor screen with the mouse. If using "motif window manager"- "mwmrc", the position of the main display is predefined and appears without any further action after entering *nidas_dba* from the keyboard. Other window managers may involve different user action before "Main Window" display appears.).

2.2 Description Of Display Windows

The screen displays of DBA Tools are X-Windows client window objects. Window control adheres to X-Windows procedures. As illustrated in Figure 1, the main window consists of a project area list, globe map, menu bar, and remark area. Predefined project areas are listed in the project area list. The globe map displays a coastline of the entire world. The remark area displays the current status of any user interaction with the tool.

When a project area is selected from the "Project Area" list, the "DATA SELECTION" dialog shown in Figure 2, appears. This dialog has a "Data Type" list and a "Dataset" list. For the selected project area the "Data Type" list shows all the available data types. Selecting a data type from this list will display all the available datasets in the "Dataset" list. When the "Dismiss" button is selected the dialog is removed.
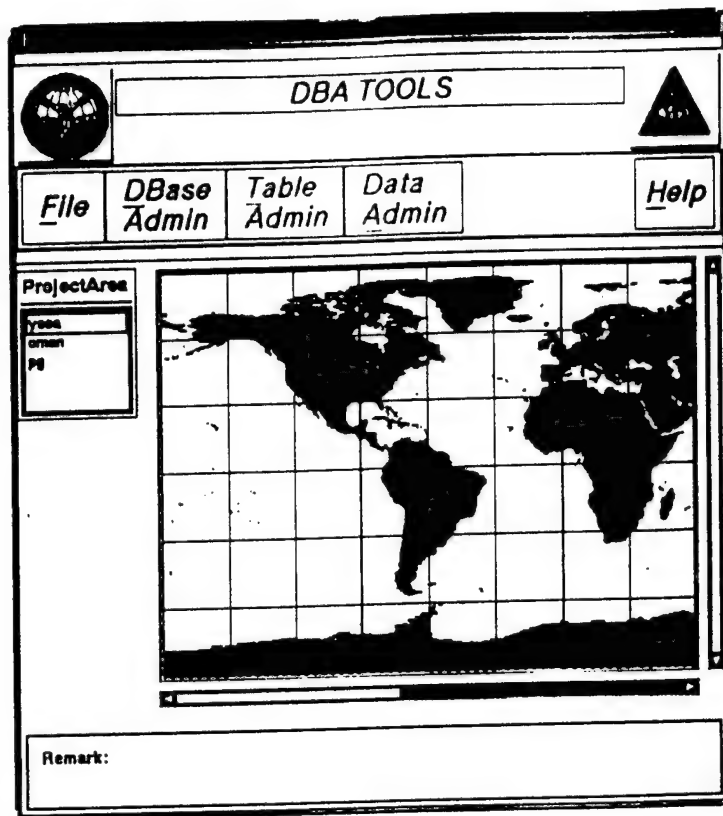
Figure 1. Illustration of the DBA Tools Main Window.
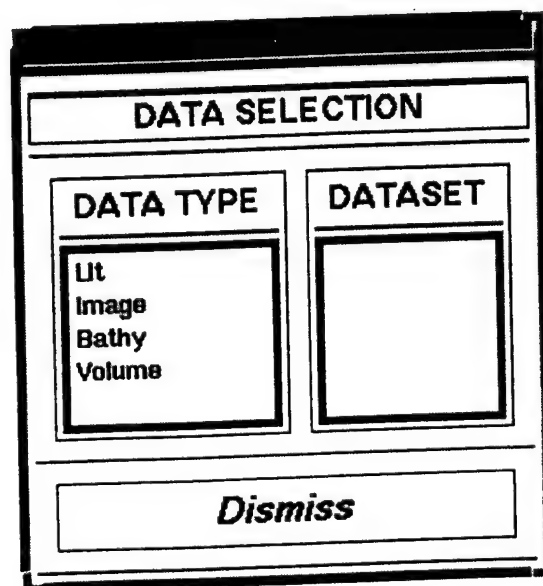
Figure 2. "Data Selection" Dialog.

2.2.1 File Pulldown Menu

When the "File" button is selected from the menu bar, a pulldown menu appears with the choices of Reset and Exit. Selecting the "Reset" option will remove any user selection made in the project area list. Selecting the "Exit" option will exit from the application.

2.2.1 DBase Admin Pulldown Menu

When the "DBase Admin" button is selected from the menu bar, a pulldown menu appears with the choice of ACL (Access Control List). Selecting the "ACL" option displays the "Access Control List" dialog shown in Figure 3. This dialog allows the operations delete user, add user, update user privileges, and reset. The "Users" list shows all the users currently in the access control list. The "Privileges" box shows all the available privileges for a user. Select a user by clicking on any entry in the "Users" list. The "Privileges" box will then display the currently available privileges for that user.   To exit from the "Access Control List" dialog, click on the "Exit" button.

Figure 3. "Access Control List" Dialog.

To add a new user to the access control list, first type in the user name in the "UserName" text area. Then set the privileges of the user by selecting the appropriate privileges toggle buttons from the "Privileges" box. Select the "Add" button to complete the addition of a new user. The new user has to be a valid user name.

To delete a user from the list select a user and click on the "Delete" button. The user is then removed from the access control list and the "Privileges" box is reset.

To update the privileges for a user, change the privileges in the "Privileges" box. The privileges can be changed by selecting or deselecting the toggle buttons of the individual privileges. As shown in Figure 3, the available privileges are acl, tables, inventory, ingest, and delete. After making the necessary changes, click on the "Update" button to register the changes.

When the "Reset" button is selected, all the user interactions made in this dialog are removed and the dialog reverts to the default state.

2.2.3 Table Admin Pulldown Menu

The "Table Admin" menu button becomes active once a dataset is selected with a data type of LLT. When the "Table Admin" button is selected from the menu bar, a pulldown menu appears with the choice of "Add Table Space". Selecting the "Add Table Space" option displays the "LLT Data Tables" dialog shown in Figure 4. This dialog displays a list of tables and their status. This dialog allows the administrator to close a table, open a new table, or reset the dialog.

Figure 4. "LLT Data Tables" Dialog.

To close a table, select the item from the table list that has a status of "load" and click on the "Close" button. The status on the selected table is then changed to "full" indicating that the table has been closed.

To create a new table first close the currently open table. Then click on the "Open" button. This will bring up the "New Table Name" dialog. This dialog contains a suggested name for the new table. Select the "Ok" button to accept the name or type in a new name in the text area and then select "Ok". Selecting the "Ok" button will then create a new table in the database and its associated information will appear in the table list. If the "Exit" button is selected from the "New Table Name" dialog, then no new table is created and the previously closed table is opened up again.

When the "Reset" button is selected all the user interactions made in this dialog are removed and the dialog reverts to the default state.

The "Add Table Space" utility is provided to give the administrator some means of managing the amount of data in each table. The bigger the table gets, the slower the retrieval time for the data in that table. This privilege should probably be kept isolated to the administrator alone. To exit from the dialog, click on the "Exit" button.

2.2.4 Data Admin Pulldown Menu

When the "Data Admin" button is selected from the menu bar, a pulldown menu appears with the options of inventory, ingest, and delete. The inventory and delete options are similar for all of the data types with the exception of bathymetry in that it does not have a version.

Selecting the "Inventory" option produces the "Inventory LLT Format Data" dialog shown in Figure 5. As a default this dialog contains all the available versions in the "Versions" dialog with the exception of bathymetry. Selecting a version from the list results in a list containing all the associated information such as id, record count, stamp time, min lat/lon, and max lat/lon. When the "Reset" button is selected, any user interaction is removed and the associated information list is empty. Select the "Exit" button to exit from this dialog.

Selecting the "Ingest" option produces the "Ingest LLT Data" dialog shown in Figure 6. New data can be ingested into the database through this dialog. The version name and the file name (containing the data) can be specified by typing into the corresponding text boxes. Selecting the "Ingest" button will then ingest the data from the file into the database. Select the "Reset" button to remove any

user interaction with the dialog. To exit from the dialog click on the "Exit" button. This dialog is similar for all data types.

Figure 5. "Inventory LLT Format Data" Dialog.

Figure 6. "Ingest LLT Data" Dialog.

Selecting the "Delete" option produces the "Delete LLT Format Data" dialog similar to that of inventory. When a version is selected the list of associated information is displayed in the associated information list. Select an item from this list by clicking on the item. To delete the dataset then click on the "Delete" button. The "Reset" button removes any user interaction with the screen.

APPENDIX E

NIDAS INSTALLATION PROCEDURES

The following instructions explain how to install NIDAS. These instructions have been provided with the NIDAS software as a "README" file, and contain the following sections:

- Prerequisites
- Creating the proper Environment
- Importing the Database
- Installing the Software
- Clean-Up
- Remarks

Prerequisites

The Software must be downloaded off the tape and in the correct directory to where NIDAS is to be installed. The software is in the form of a **tar** file that has been loaded onto the tape. The **tar** file has been loaded onto the tape from a SunOS system using **tar** to load it with. The System Administrator will need to help with this. After the **tar** file has been downloaded off the tape and put into the proper directory, it can be unt**ar**ed with the command **tar -xvf ONIDAS_SW.tar**. This will create a directory called *ONIDAS_SW*. Remember this directory as it will be used in creating the user environment.

Oracle must be up and running and a database created for NIDAS. For example, the database can be named *nidas*. An oracle user must exist with the name *neons* with a password of *neons*. Caution must be exercised when creating the *nidas* database to make sure that the rollback segments and the tablespaces are large enough. When a transaction is initiated, a rollback segment is selected to hold that transaction. Only one segment is used per transaction. Therefore, all of the rollback segments have to be large enough to handle the largest transaction. The recommendation is to have one or more rollback segments with at least the size of 50M. The following is the required name and recommended sizes for the tablespaces:

- **GEOGRAPHIC** - This if for the geographic data. Size: 200M

- **INDEX_PRIMAIRE_NEONS** - This is for the indexes for the primary data. Size: 200M

- **PRIMAIRE_NEONS** - This is for the primary data. Size: 350M

- **NEONS** - This is for other metadata. Size: 200M

The UNIRAS graphics package must have been installed and the license daemon running.

Creating the Proper Environment

These changes and additions are to be made to each user's *.cshrc* file. For this example, NIDAS is to be installed in the directory */usr/people/nidas*. After making these changes, the *.cshrc* file must be sourced. This can be done by the command **source ~/.cshrc**.

Make Sure: UNIDIR points to the UNIRAS software.
(ex: **setenv UNIDIR /usr/uniras/6v4a**)

Make Sure: UNIRAS login file has been sourced.
(ex. **source $UNIDIR/base/uni.login**)

Make Sure: ORACLE_HOME points to the oracle software.
(ex. **setenv ORACLE_HOME /opt/oracle/product/7.1.4**

Make Sure: ORACLE_SID points to the nidas database.
(ex. **setenv ORACLE_SID *nidas*)**

Add: **setenv ORA_NIDAS_SW /usr/people/nidas/ONIDAS_SW**
This environment variable points to the NIDAS software directory. It will be used by the software.

Add: **setenv ORA_NEONS_SW $ORA_NIDAS_SW/oneons_sw**
This environment variable points to NEONS software.

Add: **setenv ORA_NIDAS3_EXP ~**
This environment variable points to a directory that you, as a user, have write permission. This directory is for the export files to be exported to. In the directory specified by this variable, there should be another directory named *n_export*. This is the directory that NIDAS puts the export files.

Add: **setenv DBA nidas**
This environment variable points to the nidas dba account that you are installing NIDAS under. This has to be a real user that owns the software.

Add: **setenv XAPPLRESDIR ~/app-defaults**
This environmental variable points to your application default resource directory. If you do not have this directory in your home directory, it must be created.

Add: **set path = ($path $ORACLE_HOME/bin $ORA_NIDAS_ SW/bin)**
This adds the NIDAS executable directory and the Oracle executable directory to your path. If you do not have a path to begin with, take "$path" out of this command.

Add: **source $ORACLE_HOME/bin/coraenv**
This brings in the rest of the ORACLE environment.

Importing the Database

Change the current directory to *$ORA_NIDAS_SW* (**cd $ORA_ NIDAS_ SW**) and execute **INSTALL**. This is simple script that will ask a few questions and then compile the software.

You will be asked if you want to clean, clobber, or install the software. Answer no to the clean and clobber by typing *n* followed by the <return> key. Then answer yes to the install by typing *y* followed by the <return> key.

Then you will be asked if you want to install the nidas database. Answer yes to this question by typing *y* followed by the <return> key. This executes **oimport_db** which uncompresses the import file, imports the database into oracle, and compresses the import file. This step can be done manually by executing **oimport_db**. This step also compiles some data utilities. This can be done manually by changing to the *$ORA_ NIDAS_SW/sample_data/n_utilities* (**c d $ORA_NIDAS_SW/sample_ data/n_utilities**) and executing the command **make -f make. MACHINE** where MACHINE is either sun, sol, sgi4, or sgi5.

Installing the Software

Refer to "Importing the Database" for installing the data utilities.

Then you will be asked if you want to install the NEONS software. Answer yes to this question by typing *y* followed by the <return> key. This can be done manually by changing to the *$ORA_NEONS_SW/libsrc/db_io, $ORA_NEONS_ SW/libsrc/db_util*, and *$ORA_NEONS_SW/libsrc/nidas_io* directories and executing **make -f make.MACHINE install** where MACHINE is either sun, sol sgi4, or sgi5.

Then you will be asked if you want to install the NIDAS software. Answer yes to this question by typing *y* followed by the <return> key. This can be done manually by changing to the *$ORA_NIDAS_SW/onidas3/src* directory and executing **male -f make.MACHINE install** where MACHINE is either sun, sol, sgi4, or sgi5. Then changing to the *ORA_NIDAS_ SW/onidas3/dba* directory and executing **make.MACHINE install** where MACHINE is either sun, sol, sgi4, or sgi5.

Clean-up

You need to copy the "app-defaults" files to your app-defaults directory. You can do this by executing the command:

cp $ORA_NIDAS_SW/app-defaults/* $XAPPLRESDIR/.

If you are installing NIDAS on a SGI, you need to copy the "app-default" file to the system app-defaults director. This has to be done by the system administrator logged in as root. As root, execute:

cp $ORA_NIDAS_SW/ app-defaults/* /usr/lib/X11/app-defaults/.

Remarks

Some sample data has been provided for ingestion. This data is located in the *$ORA_NIDAS_SW/sample_data* directory as *moods* and *n_testdata*.

Directories used by NIDAS:

- $ORA_NIDAS_SW - NIDAS Software
- $ORA_NIDAS3_EXP/n_export - Export directory
- $ORA_NIDAS3_EXP/n_export/synthetic_db - Synthetic profile Database
- $ORA_NIDAS_SW/onidas3/src - NIDAS default configuration file location
- $ORA_NIDAS_SW/bin - Software binary directory
- /tmp - Temporary Directory

The executables that are provided and created are as follows:

- *onidas3* - Nidas
- *onidas_dba* - DbaTools for Nidas
- *onrcs* - Configuration System for Nidas
- *split-b* - Splits data (master format) into Temperature and Salinity
- *chrtr8* - Interpolates grid into chrtr format

- *chrtrout* - Reads bathy data (chrtr format) and makes ascii file for viewing
- *binmaster* - Subsets a master format file by location, month, instrument, and/or bottom depth
- *dumpheader* - Reads llt data and makes ascii file or header only
- *dumpm* - Reads llt data and makes ascii file for viewing
- *fatfinger* - Reads ascii file of llt profiles created manually by a user and converts to master format
- *imakemaster* - Converts MOODS admin format to master "B" file format for NIDAS ingest
- *lclimfacs* - Reads volume data (3-D climatology and model grids) and lists pertinent information
- *provprof-master* - Reads NIDAS export file for "synthetic" profiles and converts to master format.
- *filefacs* - Reads llt data (master format) and lists pertinent information about the data set.

APPENDIX F
EXAMPLE SCENARIO

USING NRCS

Creating a Project Area:

- Click on the "Add Project Area" button (refer to Appendix G for a description of pixmaps).

- Inside the "Project Area Create" window, click inside the "ProjectArea" textbox and type *ysea* followed by the <enter> key.

- Click inside the "AreaDsc" and the "Project" textboxes and type *test example* followed by the <enter> key.

- Click on the "GeogLoc" button.

- Inside the "Project Boundary Create" window, click inside the "MinLat" textbox and type *20.0* followed by the <enter> key.

- Do the same with "MinLon", "MaxLat", and "MaxLon" entering *110.0, 45.0,* and *135.0* respectfully.

- In the "Project Area Create" window, click the "Add" button.

- When finished, click the "Exit" button. A New Project Area should be shown in the "Project Area" list.

Creating a Dataset:

- Click on "ysea" from the "ProjectArea" list.

- Click on the "Add DataSet" button (refer to Appendix G for a description of pixmaps).

- Inside the "DataSet Add" window, click inside the "Dataset" textbox and type *moods* followed by the <enter> key.

- Click inside the "Class" textbox and type the integer *0* followed by the <enter> key.

- Click inside the "Desc" textbox and type *test example* followed by the <enter> key.

- Click on the "DataType" button and select "Llt" from the pulldown menu.

- Inside the "Llt Data Add" window, click inside the "+/-", "-", and "+" textboxes and type *16.0, 0*, and *0* respectfully followed by the <enter> key.

- Select the "IsLocation" and the "IsProfile" toggle buttons.

- Click on the six color buttons and select "Green" from the pulldown menu.

- Inside the "DataSet Add" window, click on the "Add" button.

- When finished, click on the "Exit" button. The new dataset should be shown in the "Dataset(s)" list.

USING DBATools

Ingesting Data

- Select "yesa" from the "ProjectArea" list.

- Inside the "Data Selection" window, select "Llt" and "moods" ("moods" will appear after "Llt" is selected).

- From the "Data Admin" menu button, select "Ingest".

- Inside the "Ingest LLT Data" window, click inside the "VrsnName" textbox and type *vrsn1*.

- Click inside the "FileName" textbox and type **x*/sample_data/moods/ moodstest-ys.dat* where **x** is replaced with the location of the NIDAS software. (The location of the NIDAS software is found in the environment variable $ORA_NIDAS_SW.)

- Click the "Ingest" button.

- When finished, click the "exit:" button.

USING NIDAS

Reading and Displaying Data:

- Inside the NIDAS Top Level Window, select "ysea" from the "Project Area" list.

- From the "Program" menu button, select "Nidas".

- Inside the NIDAS Main Window, click on the "Data Tools" "Data" button (refer to Appendix G for a description of pixmaps).

- Inside the "Data Selection" window, select "Llt' and "moods" ("moods" will appear after "Llt" is selected).

- Click the "Data" button.

- Inside the "Llt Data Selection" window, click the "Versions" toggle button.

- Inside the "Versions" window, select the "vrsn1" version and click "Exit".

- Inside the "Llt Data Selection" window, click the "Read" button.

- When finished, click the "Dismiss" button.

- Inside the "Data Selection" window, click "Dismiss".

- Inside the "Display On/Off Toggle Buttons" area, click the "moods" toggle button.

- From the "Nidas" menu button, select "Exit".

- Inside the "Quit Nidas" window, click "Ok".

USING DBATOOLS

Deleting Data

- Select "ysea" from the "ProjectArea" list.

- Inside the "Data Selection" window, select "Llt" and "moods" ("moods" will appear after "Llt" is selected).

- From the "Data Admin" menu button, select "Delete".

- Inside the "Delete Llt Format Data" window, select "vrsn1" from the "Versions" list.

- Select the entry from the "ID" list.

- Click the "Delete" button.

- When finished, click the "Exit" button.

USING NRCS

Deleting a DataSet

- Select "ysea" from the "ProjectArea" list.

- Select "moods :Llt" from the "Dataset(s)" list.

- Click the "Delete Dataset" button (refer to Appendix G for a description of pixmaps).

- Inside the "Dataset Delete" window, click the "Delete" button.

Deleting a Project Area

- Select "ysea" from the "ProjectArea" list.

- Click the "Delete Project Area" button.

- Inside the "Project Area Delete" window, click the "Delete" button.

APPENDIX G
NIDAS PIXMAPS

NIDAS

Data Select/ Option
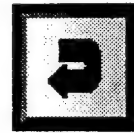
Plot Enhancement

Zoom

Polygon Subsetting (Profile Isolation

Reference Polygon

Multiview

Polygon

Interpolation

Polygon /Zoom Options

Update Flag

Repaint

Transect

Back To Default
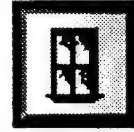
Single Profile

Window Options

Histogram

Last Polygon

Point Info

Erase Polygon
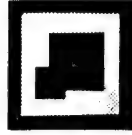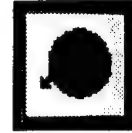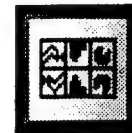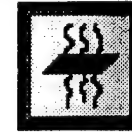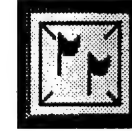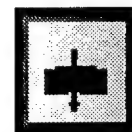
Synthetic

Project
Area Info

Data Set
Add

Dataset
Info
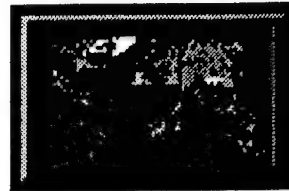
Project
Area Delete
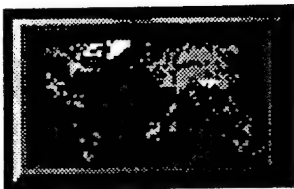
Project
Area Add

Dataset
Delete
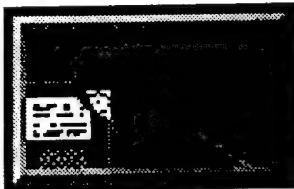
Zoom Area

APPENDIX H
NIDAS TABLES AND CHARTS

Classification Code

Code	Classification
0	Default Minimum Class
1010010	Unclassified; Unlimited Distribution; Public Domain Data
1100010	Unclassified
10001000	Delete Class
100000000	Default Maximum Class

Instrument Code

Code	Instrument
0	Special Instrument
1	Message Data
2	Mechanical Bathythermograph (MBT)
5	New
10	Some Unknown Electronic Temperature Depth Instrument
11	Expendable Bathythermograph
12	Air Deployed Expendable Bathythermograph
13	Submarine Deployed Expendable Bathythermography (SXBT)
14	Helicopter Deployed Expendable Bathythermography (HXBT)
15	Expendable Sound Velocity Profiler (XSV)
17	Submarine Deployed Sound Velocity Profiler (SXSV)
18	Time Series XBT (TSXBT)
25	Hydrocast; Bottles and Reversing Thermometers
30	Some Unknown Electronic Salinity Temperature Depth Instruments

31	Salinity, Temperature and Depth Probe (STD)
32	Low-Resolution STD from NODC
33	Conductivity, Temperature Depth Probe (CTD)
34	CTD with Bottles, Reversing Thermometers
35	CTD Time Series (YO-YO)
36	Sound Velocity, Salinity, Temp, and Depth (SVSTD)
39	Temperature, Salinity Microstructure Profiler
40	Some Unknown Current Profile Instrument
60	Some Unknown Optical Profile Instrument
99	Special Instrument

Source Code

Code	Source
0	Special Data
2	FNOC Message Data
4	NODC SDII - Through 1980
6	FNOC XBT in SPOT Format
7	NODC STD Data High Resolution
8	British - MBT and Xbt Data from (Taunton England)
9	NODC MBT Card Image Format
11	Japanese MBT/XBT
12	Lamont XBTs
13	National Marine Fisheries Service SWFC XBT Format
14	Argentine and Japanese Inflection Point Profiles
15	NODC SDI Format - Through 1978
16	French and Noumea Data, MBT and XBT
17	Korean STD Data
18	Standard Level Japanese Data, MBT, XBT, and Hydrocast
19	STD Data from Scripps Inst. of Oceanography

20	Old French Data Set - Through 1967
21	Norwegian Data Set - Through 1967
22	NODC File 022 (Temp/Sal Data)
23	Emery STD
24	Hawaii Shuttle Data
25	NODC UBT Format (Temperature Profiles)
26	Monterey Bay HYDAT - Through 1978
27	Oregon State University Hydrocast and STD Data
28	NAVOCEANO XBT (NAVO Code 9000 XBTs)
29	-
30	-
31	Japanese Fisheries
32	California Fish and Game Survey
33	Noumea Data Set XBT 6/74 - 12/81
34	SIO Composite Data Set 1979 - 1984 XBT, Message Data
35	U.S. Navy XBT
36	Israeli Navy CTD/XBT/STD
67	NAVOCEANO XBT, AXBT Data (Temperature Profiles)
68	NAVOCEANO CTD, STD, SVSTD Data (Temp/Sal/Data)
69	Ship Injection Temp
99	Special Data

Julian Date Calendar

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Day
1	1	32	60	91	121	152	182	213	244	274	305	335	1
2	2	33	61	92	122	153	183	214	245	275	306	336	2
3	3	34	62	93	123	154	184	215	246	276	307	337	3
4	4	35	63	94	124	155	185	216	247	277	308	338	4
5	5	36	64	95	125	156	186	217	248	278	309	339	5

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Day
6	6	37	65	96	126	157	187	218	249	279	310	340	6
7	7	38	66	97	127	158	188	219	250	280	311	341	7
8	8	39	67	98	128	159	189	220	251	281	312	342	8
9	9	40	68	99	129	160	190	221	252	282	313	343	9
10	10	41	69	100	130	161	191	222	253	283	314	344	10
11	11	42	70	101	131	162	192	223	254	284	315	345	11
12	12	43	71	102	132	163	193	224	255	285	316	346	12
13	13	44	72	103	133	164	194	225	256	286	317	347	13
14	14	45	73	104	134	165	195	226	257	287	318	348	14
15	15	46	74	105	135	166	196	227	258	288	319	349	15
16	16	47	75	106	136	167	197	228	259	289	320	350	16
17	17	48	76	107	137	168	198	229	260	290	321	351	17
18	18	49	77	108	138	169	199	230	261	291	322	352	18
19	19	50	78	109	139	170	200	231	262	292	323	353	19
20	20	51	79	110	140	171	201	232	263	293	324	354	20
21	21	52	80	111	141	172	202	233	264	294	325	355	21
22	22	53	81	112	142	173	20	234	265	295	326	356	22
23	23	54	82	113	143	174	204	235	266	296	327	357	23
24	24	55	83	114	144	175	205	236	267	297	328	358	24
25	25	56	84	115	145	176	206	237	268	298	329	359	25
26	26	57	85	116	146	177	207	238	269	299	330	360	26
27	27	58	86	117	147	178	208	239	270	300	331	361	27
28	28	59	87	118	148	17	209	240	271	301	332	362	28
29	29	*	88	119	149	180	210	241	272	302	333	363	29
30	30		89	120	150	181	211	242	273	303	334	364	30
31	31		90		151		212	243		304		365	31
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Day

*For Leap Year, this number will be 60 and add one to the rest. Total for Leap Year is 366.

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